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Supreme Court, U.S.
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No. 14-

IN THE

Supreme Court of the United States

LIFE TECHNOLOGIES CORPORATION; INVITROGEN IP HOLDINGS, INC.; APPLIED BIOSYSTEMS, LLC,

Petitioners,

v.

PROMEGA CORPORATION,

Respondent.

On Petition for a Writ of Certiorari to the United States Court of Appeals for the Federal Circuit

PETITION FOR A WRIT OF CERTIORARI

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QUESTIONS PRESENTED

35 U.S.C. § 271(f)(1) provides that it is an act of patent infringement to "suppl[y] . . . in or from the United States all or a substantial portion of the components of a patented invention, . . . in such manner as to actively induce the combination of such components outside the United States." Despite this Court's clear dictate that section 271(f) should be construed narrowly, *Microsoft Corp.* v. *AT&T Corp.*, 550 U.S. 437 (2007), the Federal Circuit held that Life Technologies is liable for patent infringement for worldwide sales of a multi-component kit made abroad because just a single, commodity component of the kit was shipped from its U.S. facility to its own foreign facility. The questions presented are:

1. Whether the Federal Circuit erred in holding that a single entity can "actively induce" itself to infringe a patent under 35 U.S.C. § 271(f)(1).

2. Whether the Federal Circuit erred in holding that supplying a single, commodity component of a multi-component invention from the United States is an infringing act under 35 U.S.C. § 271(f)(1), exposing the manufacturer to liability for all worldwide sales.

PARTIES TO THE PROCEEDINGS

Petitioners, Life Technologies Corporation, Invitrogen IP Holdings, Inc., and Applied Biosystems, LLC, were the defendants-appellants below.

Respondent, Promega Corporation, was the plaintiff-cross-appellant below.

RULE 29.6 STATEMENT

Applied Biosystems, LLC, and Invitrogen IP Holdings, Inc., are wholly-owned subsidiaries of Life Technologies Corporation. Life Technologies Corporation is an indirect wholly-owned subsidiary of Thermo Fisher Scientific Inc. There is no other publicly held corporation owning 10% or more of the stock of petitioners.

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PETITION FOR A WRIT OF CERTIORARI

Petitioners Life Technologies Corporation, Invitrogen IP Holdings, Inc., and Applied Biosystems, LLC (collectively, "Life Technologies"), respectfully petition for a writ of certiorari to review the judgment of the United States Court of Appeals for the Federal Circuit.

OPINIONS BELOW

The Federal Circuit's opinion is reported at *Promega Corp.* v. *Life Technologies Corp.*, 773 F.3d 1338 (Fed. Cir. 2014), and is reproduced at Petition Appendix (Pet. App.) 1a–43a. The unpublished order denying the petition for rehearing and rehearing en banc is reproduced at Pet. App. 67a–68a. The district court's unpublished opinion is reproduced at Pet. App. 44a–66a.

JURISDICTION

The Federal Circuit entered its judgment on December 15, 2014, and denied a timely-filed petition for rehearing and rehearing en banc by order dated February 26, 2015. On April 22, 2015, Chief Justice Roberts extended the time within which to file a petition for a writ of certiorari to and including June 26, 2015. This Court has jurisdiction over this petition pursuant to 28 U.S.C. § 1254(1).

STATUTORY PROVISIONS

35 U.S.C. § 271(f) provides:

> (1) Whoever without authority supplies or causes to be supplied in or from the United States all or a substantial portion of the components of a patented invention, where such components are

uncombined in whole or in part, in such manner as to actively induce the combination of such components outside the United States in a manner that would infringe the patent if such combination occurred within the United States, shall be liable as an infringer.

(2) Whoever without authority supplies or causes to be supplied in or from the United States any component of a patented invention that is especially made or especially adapted for use in the invention and not a staple article or commodity of commerce suitable for substantial noninfringing use, where such component is uncombined in whole or in part, knowing that such component is so made or adapted and intending that such component will be combined outside of the United States in a manner that would infringe the patent if such combination occurred within the United States, shall be liable as an infringer.

INTRODUCTION

In the decision below, a sharply divided panel of the Federal Circuit broadly expanded what is supposed to be a narrow exception to the rule against extraterritorial application of United States patent law. The court held that the patentee was entitled to infringement damages based on Life Technologies' *worldwide* sales of genetic testing kits, even though the only connection between Life Technologies' foreign sales and the United States was that Life Technologies shipped a single, commodity component of the kits from its facility in the United States to its own manufacturing facility abroad. The Federal Circuit's decision was based on two fundamental errors in its interpretation of 35 U.S.C. § 271(f)(1).

First, the court held that a single, integrated entity can "actively induce" itself to infringe a patent by shipping a component to its own overseas facilities. Second, the court held that a single, commodity component of a multi-component invention can be "a substantial portion of the components." Each of these serious errors warrants this Court's review. The combination dangerously expands the extraterritorial reach of U.S. patent law, directly contrary to this Court's explicit instruction that § 271(f) should be narrowly interpreted in light of the presumption against extraterritoriality.

First, the Federal Circuit's holding that a single entity can "induce" itself to infringe misreads the plain text of the statute and ignores this Court's precedents. The ordinary meaning of "induce" is to "influence" or "persuade"; it is action inherently directed at a third party. And this Court has interpreted "induce" in 35 U.S.C. § 271(b) to have precisely this meaning. *Commil USA LLC* v. *Cisco Sys., Inc.*, 135 S. Ct. 1920, 1924 (2015); *Global-Tech Appliances, Inc.* v. *SEB S.A.*, 131 S. Ct. 2060, 2065 (2011). Yet the Federal Circuit held that in § 271(f), "induce" has the different and much broader meaning of "cause," and that a single party can "cause" itself to infringe by shipping a component to itself. This interpretation is contrary to both the canon that the same word in the same statute should be interpreted in the same way, and to legislative history explicitly stating that the term "induce" in § 271(f) was drawn from the existing § 271(b).

Second, the Federal Circuit's holding that just a single, commodity component can be a "substantial portion of the components" of the invention if it is in some sense "important," suffers from the same serious flaws. The text and structure of the statute

make clear that "a substantial portion" in § 271(f)(1) refers to the quantity, not the subjective importance or relative significance, of the components supplied. The text of § 271(f)(1) itself is plain that no fewer than "a substantial portion" of the invention's components must be supplied. A further textual indication is found in § 271(f)(2), which provides a basis for infringement liability for the supply of a single component so long as it is "especially made or especially adapted for use in the invention and not a staple article or commodity of commerce." While § 271(f)(2) consistently uses the term "component" in the singular, § 271(f)(1) consistently uses the term "components" in the plural. Read together, it is clear that Congress did *not* intend to impose liability for the supply of a single component that is merely an off-the-shelf "staple article or commodity of commerce." The Federal Circuit's holding also disregards this Court's guidance that § 271(f)(1) and § 271(f)(2) "differ, among other things, on the quantity of components that must be 'supplied from the United States' for liability to attach." *Microsoft Corp.* v. *AT&T Corp.*, 550 U.S. 437, 454 n.16 (2007) (alteration and omission omitted).

Furthermore, both of the Federal Circuit's interpretations run afoul of the "presumption that United States law governs domestically but does not rule the world," a presumption that "applies with particular force in patent law." *Id.* at 454–55. Far from following this Court's direction to "resist giving . . . § 271(f) an expansive interpretation," the Federal Circuit broadened the statute's language to maximize its extraterritorial reach. *Id.* at 442.

Each of the Federal Circuit's extraterritorial expansions of § 271(f)(1) is highly problematic. But the combined effect of both is perilous to the business

community. Both single, integrated companies and domestic manufacturers of components now need to account for the potentially crushing burden of U.S. patent infringement liability for worldwide sales, based on the supply of *any* individual component, however common and useful for non-infringing purposes. Furthermore, given the exclusive jurisdiction of the Federal Circuit over U.S. patent law, only this Court can correct the Federal Circuit's misinterpretation of the statute and eliminate the sweeping liability that the ruling creates for manufacturers and component suppliers across a broad array of industries. This Court should grant the petition to rein in the Federal Circuit's overbroad reading of the statute, and to reassert that § 271(f)(1) is merely a narrow exception to the presumption against extraterritorial application of patent law.

STATEMENT OF THE CASE

Life Technologies manufactures genetic testing kits, which generate DNA profiles. Pet. App. 8a. These kits are "useful in many fields," *id.* at 3a; for example, they are "used by law enforcement agencies for forensic identification, and by clinical and research institutions for purposes such as analyzing cancer cells," *id.* at 8a. As the Federal Circuit explained, "[t]he kits contain a number of components, including: (1) a primer mix; (2) *Taq* polymerase; (3) PCR reaction mix including nucleotides; (4) a buffer solution; and (5) control DNA." *Id.*

Together, these components are capable of copying, or "amplif[ying]," the DNA being studied, which is necessary "in order to obtain a detectable amount of DNA for analysis." Pet. App. 3a. The primers "mark[] the start and finish" of the area to be copied. *Id.* The nucleotides are the building blocks used to

form the copies. The buffer solution maintains the conditions needed for the copying to occur, and the control DNA is used to verify that the copying process has occurred correctly. Finally, the "*Taq* polymerase is an enzyme used to amplify the DNA sequences in order to obtain enough replicated sample for testing." *Id.* at 34a. It is undisputed that *Taq* polymerase is not especially made or especially adapted for use in the invention at issue. *Id.* at 30a n.14. Rather, it is a standard enzyme that has been widely used for decades in a large variety of applications that require copying DNA sequences.

The Federal Circuit observed that Life Technologies "manufactures one component of its kits in the United States, the *Taq* polymerase, which it ships overseas to a LifeTech manufacturing facility in the United Kingdom." Pet. App. 8a. The kits are manufactured in the United Kingdom, and sold worldwide. *Id.*

Promega Corporation ("Promega") licensed a patent on technology for replicating DNA.[1] Pet. App. 7a. Life Technologies, in turn, had a license from Promega to use the patented technology for certain applications. *Id.* at 9a & n.3. Promega sued Life Technologies in 2010, alleging that it had infringed the patent by selling its kits into unlicensed fields, and sought damages for worldwide sales. *Id.* at 9a. At trial, the jury returned a verdict for Promega, found that Life Technologies' infringement was

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[1] Promega sued Life Technologies for infringement of five patents that it owned or licensed. The Federal Circuit held that four of those patents were invalid on the ground of nonenablement. Pet. App. 13a-22a. The holdings at issue here involve the remaining patent, No. RE 37,984 (the "Tautz patent"), of which Promega was a non-exclusive licensee in some fields and an exclusive licensee in others. *See id.* at 5a.

willful, and awarded damages for "all of LifeTech's worldwide sales." *Id.* at 11a.

The district court then granted judgment as a matter of law to Life Technologies, holding that Promega had failed to present sufficient evidence to sustain a jury verdict under § 271(f)(1), the only provision that could reach Life Technologies' worldwide sales of kits manufactured abroad. Pet. App. 51a–63a. The district court held that § 271(f)(1) did not apply for two reasons.

First, "the parties agree that plaintiff did not present any evidence at trial that defendants induced another party to combine any components outside the United States in an infringing manner." Pet. App. 60a. Instead, "defendants did all the combining themselves." *Id.* The court held that "the term 'actively induce' requires the involvement of a third party," reasoning that "[b]ecause the ordinary meaning of the word 'induce' is to influence or persuade, it makes little sense in common parlance to say that someone 'induced himself' to perform a particular action." *Id.* (citation omitted). The court also relied on the canon that "the same phrase in the same statute means the same thing," *id.* at 61a, noting that the Federal Circuit has interpreted the same term in § 271(b) to mean "encouraging another's infringement." *Id.* at 60a. The court rejected Promega's argument that this interpretation would create an "undesirable loophole," remarking that "the Supreme Court has admonished lower courts not to engage in 'dynamic judicial interpretation' of § 271(f) in order to avoid perceived loopholes." *Id.* at 61a–62a (quoting *Microsoft*, 550 U.S. at 457). The court concluded that it could not "accept plaintiff's interpretation of § 271(f)(1) in the face of all the

reasons not to," including the statutory text and Supreme Court precedent. *Id.* at 63a.

Second, the district court ruled that Life Technologies had not infringed under § 271(f)(1) because the evidence "showed at most that *one* component of all the accused products, a polymerase, was supplied from the United States." Pet. App. 51a. The court held that § 271(f)(1)'s requirement that "all or a substantial portion" of the components be supplied from the United States does not embrace merely a single component. *Id.* at 54a–57a. Section 271(f)(1), the court ruled, could not plausibly be interpreted to reach a single component "when viewed in conjunction with . . . § 271(f)(2)," which "extends to 'any component' of the invention" supplied from the U.S., but requires that the component be "especially made or especially adapted for use in the invention and not a staple article or commodity of commerce suitable for substantial noninfringing use." *Id.* at 54a–55a.

The court further observed that this Court's decision in *Microsoft* supported its ruling for two reasons. First, *Microsoft* stated that § 271(f)(1) and (f)(2) "'differ, among other things, on the quantity of components that must be supplied.'" Pet. App. 55a–56a (alteration omitted) (quoting *Microsoft*, 550 U.S. at 454 n.16). Second, this Court "concluded that it was improper to use policy concerns about 'loopholes' to justify broad interpretations of the patent statute," particularly given "the presumption that 'our patent law operates only domestically and does not extend to foreign activities.'" *Id.* at 56a (quoting *Microsoft*, 550 U.S. at 455).

In a split decision, the Federal Circuit reversed, "disagree[ing] with the district court's reading of § 271(f)(1)." Pet. App. 23a. First, the majority held

that "no third party is required" to "actively induce" infringement under § 271(f)(1). *Id.* at 24a. The majority "acknowledge[d] that the word 'induce' can suggest that one is influencing or persuading 'another,'" but concluded that Congress intended the term to "encompass[] the more broad concept of 'to bring about, to cause'" an activity. *Id.* The court rejected the argument that the term "actively induce" should be given the same meaning in § 271(f)(1) as in § 271(b). It reasoned that "a single party who causes the infringement of a patent" under § 271(b) "would already be strictly liable for infringement under § 271(a)," and that "because § 271(f)(1) lacks such a strict liability companion statute, comparisons to § 271(b) are of limited value." *Id.* at 27a. The court also held that the presumption against extra-territoriality did not apply because "in this instance, Congress' chosen language assigns liability to LifeTech's conduct within the United States, based on its extraterritorial effect." *Id.* at 27a n.10.

Second, the Federal Circuit held that "a party may be liable under § 271(f)(1) for supplying or causing to be supplied a single component for combination outside the United States." Pet. App. 28a. The court concluded that the relevant "dictionary definition of 'substantial' is 'important' or 'essential,'" and thus "the ordinary meaning of 'substantial portion' suggests that a single important or essential component can be a 'substantial portion of the components' of a patented invention." *Id.* at 28a–29a.

The court further reasoned "the use of 'component' in § 271(f)(2) does not control the meaning of 'components' in § 271(f)(1)" because "these two subsections employ the terms in different contexts"; § 271(f)(2) focuses on whether a component is "especially made or especially adapted" for infringing

use, while § 271(f)(1) focuses on whether components are "substantial." Pet. App. 30a. The Federal Circuit disregarded *Microsoft*'s contrary statement as dicta, concluding that "[i]n the absence of express guidance by the Supreme Court, we will not contravene the ordinary reading of the statute and categorically exclude the 'supply' of a single component of a patented invention from the scope of §271(f)(1)." *Id.* at 33a. Finally, the majority held that *Taq* polymerase is a "substantial portion of the components of the patented invention," even though it is only one commodity component out of the five in the kit, because "[w]ithout *Taq* polymerase, the genetic testing kit recited in the Tautz patent would be inoperable." *Id.* at 34a.

Chief Judge Prost dissented. The dissent interpreted "§ 271(f)(1) and its requirement of active inducement to necessarily mean inducement of *another*," noting that the Federal Circuit has "never before held—in the context of either § 271(f) or § 271(b)—that a party can induce itself to infringe." Pet. App. 39a. The majority's interpretation, the dissent explained, "runs counter to unambiguous Supreme Court precedent" holding that "inducement liability requires a third party" under § 271(b). *Id.* And the legislative history showed that "the term 'actively induce' in § 271(f)(1) was expressly 'drawn from existing subsection 271(b),'" giving "special force" to the interpretive canon that "identical words and phrases within the same statute should normally be given the same meaning." *Id.* at 41a. Finally, the dissent explained that "the Supreme Court has cautioned against employing a policy-oriented approach to judicial decision making where it would cause law to have extraterritorial application," and that the majority's interpretation was contrary to this

presumption against extraterritoriality. *Id.* at 42a–43a. The dissent concluded that it could not accept the majority's interpretation of the statute "[b]ecause we are limited by the language of the statute, Supreme Court precedent, and our own precedent." *Id.* at 43a. Because the dissent would have found Life Technologies was "not liable under § 271(f)(1) for active inducement," it did not address the majority's "single component" interpretation. *Id.* at 39a n.1. On February 26, 2015, the Federal Circuit denied a petition for rehearing en banc. *Id.* at 68a.

REASONS FOR GRANTING THE PETITION

There are two compelling grounds for granting certiorari in this case. First, the Federal Circuit's holding that a single party can "actively induce" itself to infringe under § 271(f)(1) is contrary to the plain meaning of the statutory text, and to this Court's precedent interpreting the same language in § 271(b). Second, the Federal Circuit's holding that a single, commodity component can be a "substantial portion of the components" under § 271(f)(1) is likewise contrary to the text and structure of the statute and ignores the distinctive language and requirements for the supply of a single component under § 271(f)(2). Each of these rulings warrants this Court's review to correct the improper expansion of the extraterritorial reach of U.S. patent law. The combined effect of both rulings makes immediate review imperative.

In *Microsoft* v. *AT&T*, this Court instructed other courts to "resist giving . . . § 271(f) an expansive interpretation," applying the presumption that United States patent law "governs domestically but does not rule the world." 550 U.S. at 442, 454. The Federal Circuit's interpretation, which stretches the

statute far beyond its text to close what it perceived as "loopholes" in the extraterritorial reach of U.S. patent law, disregards this Court's instruction, and intrudes on policy issues that should be left to Congress. The Federal Circuit's ruling makes *worldwide* U.S. patent infringement liability hinge on the decision of a foreign multinational corporation or manufacturer to source its commodity supplies from the United States. Nothing in the language, structure, or policy of § 271(f) suggests that Congress meant, on the basis of so little U.S. conduct, to intrude into the policy of foreign governments regarding the availability of useful products abroad. And there is no reason to believe Congress chose to put domestic manufacturers of commodity supplies at such a dramatic disadvantage vis-à-vis their foreign competitors. This Court should grant the petition.

I. THE FEDERAL CIRCUIT'S HOLDING THAT A SINGLE ENTITY CAN "ACTIVELY INDUCE" ITSELF TO INFRINGE UNDER SECTION 271(f)(1) CONFLICTS WITH THE STATUTORY TEXT AND THIS COURT'S PRECEDENTS.

This Court should review the Federal Circuit's conclusion that a single, integrated business can induce *itself* to infringe when it ships a component from the United States to one of its own facilities abroad for combination with other components to make a U.S. patented invention. Pet. App. 24a–27a. This startling redefinition of the phrase "actively induce" is contrary to the text and structure of the Patent Act, this Court's precedents, and the presumption against extraterritoriality.

1. Section 271(f)(1) provides liability for "actively induc[ing]" the combination of components of a

patented invention "outside of the United States in a manner that would infringe the patent if such combination occurred within the United States." 35 U.S.C. § 271(f)(1). The language "actively induce" appears verbatim in the general inducement provision of the statute, § 271(b). The legislative history confirms the connection embodied in the language: "The term 'actively induce'" in section 271(f)(1) was "drawn from existing subsection 271(b) of the patent law, which provides that whoever actively induces patent infringement is liable as an infringer." 130 Cong. Rec. 28069, 28069 (1984).

In *Global-Tech Appliances, Inc.* v. *SEB S.A.*, 131 S. Ct. 2060 (2011), this Court interpreted the term "actively induce" in § 271(b) to mean "'[t]o lead on; to influence; to prevail on; to move by persuasion or influence.'" *Id.* at 2065 (alteration in original) (quoting *Webster's New International Dictionary* 1269 (2d ed. 1945)). As the Federal Circuit dissent noted here, this Court has adopted the same interpretation of inducement "in the analogous copyright context," defining the term "as 'entic[ing] or persuad[ing] *another*' to infringe." Pet. App. 39a–40a (alterations in original) (quoting *Metro-Goldwyn-Mayer Studios Inc.* v. *Grokster, Ltd.*, 545 U.S. 913, 935 (2005)); see *Sony Corp. of Am.* v. *Universal City Studios, Inc.*, 464 U.S. 417, 439 (1984) (drawing analogy between patent and copyright cases "because of the historic kinship between patent law and copyright law").

As this Court understood, these verbs do not describe actions directed toward oneself; one does not lead oneself on or influence oneself or prevail upon or move oneself by persuasion; these are actions that one directs towards another. *Global-Tech*, 131 S. Ct. at 265 (section 271(b) "may require merely that the

inducer *lead another* to engage in conduct that amounts to infringement" or "may also be read to mean that the inducer must *persuade another* to engage in conduct that the inducer knows is infringement") (emphases added); *Grokster*, 545 U.S. at 935 (defining inducement as "'entic[ing] or persuad[ing] *another*' to infringe") (emphasis added); see *id.* at 936 (noting that "liability for inducement" can be found under the Patent Act "where one 'actively and knowingly aid[s] and abet[s] another's direct infringement'" (alterations in original)). Indeed, as the district court here remarked, it "makes little sense in common parlance to say that someone 'induced himself.'" Pet. App. 60a. A single, integrated entity simply takes action; it does not induce itself to act. And earlier this Term, this Court once again remarked that "inducement of *others* to commit infringement" is a distinct form of injury from direct infringement. *Commil*, 135 S. Ct. at 1924 (emphasis added). Thus, under the definition of "induce" that this Court has adopted, "inducement liability requires a third party." Pet. App. 39a (Prost, C.J., dissenting).

The majority here "acknowledge[d] that the word 'induce' can suggest that one is influencing or persuading 'another.'" Pet. App. 24a. Yet the majority rejected that interpretation of "induce" in § 271(f), instead interpreting the term to "encompass[] the more broad concept of 'to bring about, to cause.'" *Id.* The court reasoned that "[h]ad Congress wanted to limit 'induce' to actions completed by two separate parties, it could easily have done so by assigning liability only where one party actively induced *another*." *Id.* But that reasoning assumes the conclusion, namely, that the

word "induce" does not itself refer to action directed towards another. Because the word "induce" means influencing *another*, it would be redundant to write the word "another" into the text of the statute. Congress avoided precisely that redundancy when it wrote § 271(b), the general inducement section of the statute.

Indeed, the Federal Circuit has consistently interpreted the term "induce" in § 271(b) to require the defendant to spur action by another, even though the term "another" does not appear after "induce." Pet. App. 40a (Prost, C.J., dissenting); see *DSU Med. Corp.* v. *JMS Co.*, 471 F.3d 1293, 1305–06 (Fed. Cir. 2006) (en banc) (holding that inducement requires proof "of culpable conduct, directed to encouraging *another*'s infringement") (emphasis added); *Lucent Techs., Inc.* v. *Gateway, Inc.*, 580 F.3d 1301, 1322 (Fed. Cir. 2009) (same). It nonetheless concluded that Congress used the same word to mean something entirely different when it wrote § 271(f)(1), reasoning that inducement under § 271(b) is more limited, "since a single party who causes the infringement of a patent would already be strictly liable for infringement under § 271(a)." Pet. App. 27a. But this approach is flatly contrary to a basic canon of statutory construction: "identical words and phrases within the same statute should normally be given the same meaning." *Powerex Corp.* v. *Reliant Energy Servs., Inc.*, 551 U.S. 224, 232 (2007); see *Global-Tech*, 131 S. Ct. at 2068 (noting that it "would . . . be strange" to give different meaning to the same language in different subsections of § 271). Moreover, as the dissent pointed out, this canon has "special force here" because "the term 'actively induce' in § 271(f)(1) was expressly 'drawn from

existing subsection 271(b).'" Pet. App. 41a (quoting 130 Cong. Rec. at 28,069).

The Federal Circuit's interpretation also misconstrues the relation of § 271(f) to this Court's decision in *Deepsouth Packing Co.* v. *Laitram Corp.*, 406 U.S. 518 (1972). *Deepsouth* held that manufacturing all of the components of an infringing product in the U.S., and shipping them abroad to third-party foreign customers, where they could be assembled in less than an hour, was not infringement. *Id.* at 523–24, 525–26. In *Microsoft*, this Court concluded that "[s]ection 271(f) was a direct response" to *Deepsouth*, and that "[h]aving attended to the gap made evident in *Deepsouth*, Congress did not address other arguable gaps," which "our precedent leads us to leave in Congress' court." 550 U.S. at 457–58. Here, in stark contrast, the Federal Circuit reasoned that Congress was motivated by broad "policy goals" of "prevent[ing] copiers from avoiding United States patents by supplying components" for assembly abroad, and that, "to achieve these goals, Congress chose language for § 271(f)(1) broader than the particular facts of *Deepsouth*." Pet. App. 26a. As the dissent explained, this improperly "impute[s] from Congress' supposed intent to close the *Deepsouth* loophole a much broader legislative intent to close all loopholes related to extraterritorial liability," *id.* at 41a, directly contrary to this Court's reasoning in *Microsoft*.

2. The Federal Circuit's broad interpretation of § 271(f)(1) to advance the statute's supposed "policy goals" is also contrary to the presumption against extraterritoriality. The effect of the majority's ruling will be to expand dramatically the reach of U.S.

patent law over foreign sales. Any company that supplies a component from the U.S. to its foreign facilities will find itself at risk of *worldwide* patent infringement liability. This case illustrates the magnitude of the risks at stake—Promega was awarded $52 million in lost profits on worldwide kit sales, based on evidence that Life Technologies supplied just a single commodity component from the U.S.

This Court has previously explained that, because "§ 271(f) is an exception to the general rule that our patent law does not apply extraterritorially," courts should "resist giving the language in which Congress cast § 271(f) an expansive interpretation." *Microsoft*, 550 U.S. at 442; see *Morrison* v. *Nat'l Austl. Bank Ltd.*, 561 U.S. 247, 255, 265 (2010) (the presumption against extraterritoriality is overcome only if "there is the affirmative intention of the Congress clearly expressed to give a statute extraterritorial effect," and where a statute provides "for some extraterritorial application, the presumption against extraterritoriality operates to limit that provision to its terms").

Indeed,"[t]he presumption that United States law governs domestically but does not rule the world applies with particular force in patent law." *Microsoft*, 550 U.S. at 454–55. This "traditional understanding that our patent law operates only domestically and does not extend to foreign activities is embedded in the Patent Act itself, which provides that a patent confers exclusive rights in an invention within the United States." *Id.* at 455 (citation, alterations, and quotations omitted) (citing 35 U.S.C. § 154(a)(1)); see *Brown* v. *Duchesne*, 60 U.S. (19 How.) 183, 195 (1856) (Patent law "is domestic in its

character, and necessarily confined within the limits of the United States. It confers no power on Congress to regulate commerce, or the vehicles of commerce, which belong to a foreign nation . . . ."). The United States does not exercise patent control over foreign markets, and it "correspondingly reject[s] the claims of others to such control over our markets." *Microsoft*, 550 U.S. at 455 (quoting *Deepsouth*, 406 U.S. at 531). The remedy for infringement that occurs abroad lies in "obtaining and enforcing foreign patents," *id.* at 456, not in interpreting United States patent law to "rule the world," *id.* at 454.

While § 271(f) intrudes U.S. patent law into foreign markets to a limited extent, it did not otherwise alter the fundamental principle that U.S. patent law "does not, and was not intended to, operate beyond the limits of the United States." *Id.* at 455 (quotations and alterations omitted) (quoting *Deepsouth*, 406 U.S. at 531). Therefore, as this Court has emphasized, the market exclusivity bestowed by a patent should not be expanded extraterritorially based on "mere inference from ambiguous statutory language." *Deepsouth*, 406 U.S. at 531. "Any doubt" that particular "conduct falls outside § 271(f)'s compass would be resolved by the presumption against extraterritoriality." *Microsoft*, 550 U.S. at 454. The Federal Circuit's expansive interpretation of § 271(f)(1) is flatly inconsistent with the presumption and with this Court's holding in *Microsoft*.

The Federal Circuit suggested that the presumption is inapplicable because "Congress' chosen language assigns liability to LifeTech's conduct within the United States, based on its extraterritorial effect." Pet. App. 27a n.10. But *Microsoft* rejected the argument that "the presumption holds no sway

here given that § 271(f), by its terms, applies only to domestic conduct, *i.e.*, to the supply of a patented invention's components 'from the United States.'" 550 U.S. at 456. To the contrary, the Court held that the presumption "tugs strongly against" a broad construction of § 271(f), and that "dynamic judicial interpretation" of the provision is impermissible. *Id.* at 455, 457. As this Court explained in *Morrison*, "it is a rare case of prohibited extraterritorial application that lacks *all* contact with the territory of the United States," and "the presumption against extraterritorial application would be a craven watchdog indeed if it retreated to its kennel whenever *some* domestic activity is involved in the case." 561 U.S. at 266. The point of the presumption against extraterritorial application of U.S. patent law is to prevent U.S. law from intruding on the decisions of foreign governments regarding their consumers' access to useful products. The ruling below inhibits the access of foreign markets to Life Technologies' kits, or, at a minimum, increases dramatically the cost of such access.

Here, as in *Microsoft*, the application of § 271(f) to Life Technologies is plainly extraterritorial, because it depends upon the combination of components "outside of the United States in a manner that would infringe the patent if such combination occurred within the United States." 35 U.S.C. § 271(f)(1). And as in *Microsoft*, the Supreme "Court's use of the presumption contrasts sharply with the Federal Circuit's expansive interpretations of § 271(f)." Sean Fernandes, *Microsoft Corp. v. AT&T: A Welcome Return to Patent Law's Tradition of Territoriality*, 23 Berkeley Tech. L.J. 75, 105 (2008). Review should be

granted to rein in the Federal Circuit's extraterritorial expansion of U.S. patent law.

3. This Court's review is also warranted due to the importance of the issue. The Federal Circuit's expansion of the extraterritorial scope of patent law will distort the incentives for multinational companies to supply components from facilities in the United States, "creat[ing] perverse incentives to relocate operations abroad to escape liability." *Id.* at 102. There is no dispute that if Life Technologies had supplied the *Taq* polymerase to its United Kingdom factory from a Life Technologies facility outside of the United States, foreign sales of the genetic testing kits would lie beyond the reach of U.S. patent law. Thus, under the Federal Circuit's broad interpretation, § 271(f) "discriminates against manufacturers with operations within the United States, thereby encouraging them to move their operations offshore," and potentially causing "long-term economic damage." *Id.* at 101–02. There is no reason to believe that Congress intended to create these undesirable results by using § 271(f)(1) to shape how single, integrated companies choose to source materials for foreign manufacture and sale.

In addition, because the Federal Circuit has exclusive jurisdiction over patent appeals, its rulings have an immediate nationwide impact. 28 U.S.C. § 1295. The Federal Circuit's exclusive jurisdiction means that guidance from other circuits will not be forthcoming. And because the Federal Circuit adopted its interpretation of § 271(f)(1) in a precedential opinion, which it declined to review en banc, that interpretation will remain the law of the land unless this Court intervenes. Review now should be granted to ensure that the statute is

correctly applied and to avoid the economic dislocations the decision below otherwise will impose.

II. THE FEDERAL CIRCUIT'S HOLDING THAT LIABILITY CAN BE IMPOSED UNDER SECTION 271(f)(1) FOR THE SUPPLY OF A SINGLE, COMMODITY COMPONENT CONFLICTS WITH THE STATUTORY TEXT AND THE PRESUMPTION AGAINST EXTRATERRITORIALITY.

Certiorari is also warranted to review the Federal Circuit's holding that § 271(f)(1) allows liability for foreign sales based on the supply from the United States of a single, commodity component. Section 271(f)(1) provides that the defendant must have supplied "all or a substantial portion of the components of a patented invention" from the U.S. The Federal Circuit read this to mean that liability for foreign sales is triggered when the defendant has supplied *any individual component* of the invention without which the accused product would be inoperable. Pet. App. 28a–35a.

As with its interpretation of "actively induce," the Federal Circuit's interpretation of "a substantial portion" misinterprets the statutory text and structure, and is contrary to the presumption against extraterritoriality. This holding represents another expansive interpretation of § 271(f)(1) that results in U.S. patent law intruding on foreign markets. The Federal Circuit has placed any domestic supplier of a commodity component at risk of infringement liability for its customer's foreign sales. This Court should review this important issue.

1. Textually, the Federal Circuit's broad interpretation of § 271(f)(1) does not withstand scrutiny.

The majority defined "substantial" in qualitative terms; according to the court, it means "important" or "essential." Pet. App. 28a (citing, *e.g.*, *Webster's Third New Int'l Dictionary* 2280 (2002); *XVII Oxford English Dictionary* 67 (2d ed. 1989) ("essential; material")). Accordingly, the Federal Circuit concluded that "the ordinary meaning of 'substantial portion' suggests that a single important or essential component can be a 'substantial portion of the components.'" *Id.* at 28a–29a. And, as the court later held, an essential component is nothing more than a component without which the invention "would be inoperable." *Id.* at 34a.

This holding is contrary to both the text of § 271(f)(1) itself, and to the broader statutory structure. First, the Federal Circuit's interpretation is contrary to the text of § 271(f)(1) because it is so broad as to render the "substantial portion" limitation all but meaningless. The phrase "substantial portion" modifies "components of a patented invention." 35 U.S.C. § 271(f)(1). A component of a patented invention will rarely, if ever, be unnecessary to the functioning of that invention. Indeed, if the product could operate in the same way without the component, it is questionable whether the supposed "component" would be a part of the "patented invention" at all. Here, for instance, the patented genetic testing kit would not operate correctly if any one of its five components were removed. See 5–6, *supra*. By reading "substantial portion of the components" of an invention to mean "any individual component necessary to the operation of the invention," the Federal Circuit has made virtually *every* component of a patented invention, by itself, a "substantial portion of the components" of

that invention. But if that were the purpose of the language, then Congress would have simply written "any component of a patented invention," rather than choosing "substantial portion" that so clearly suggests something narrower.

The way to make sense of the phrase "substantial portion" in this context is to read the word "substantial" in a quantitative sense, not in a qualitative sense. While the word "substantial" can mean "important," it is also commonly used to mean "large" or "ample" in quantity. See, *e.g.*, *The Random House College Dictionary* 1310 (1982) ("of ample or considerable amount, quantity, size, etc."); *Webster's Third New International Dictionary* 2280 (1981) ("abundant; plentiful" (capitalization omitted)); *Webster's New Twentieth Century Dictionary* 1817 (2d ed. 1981) ("of considerable size or amount; large"); *The Pocket Oxford Dictionary of Current English* 750 (7th ed. 1984) ("of considerable amount"). And that is clearly the way the statute uses the word. In § 271(f)(1), the term "substantial portion" follows the quantitative term "all," in the phrase "all or a substantial portion of the components." 35 U.S.C. § 271(f)(1). When paired with "all" in this manner, "substantial portion" naturally means a portion that is "large" or "considerable" in quantity, not a portion that is qualitatively "important."

Second, this interpretation becomes particularly compelling when the structure of the statute is considered. In § 271(f)(2), Congress expressly determined when the domestic supply of a single component of a patented invention should be the basis for infringement liability for foreign sales. It provided that the supply of "*any* component of a patented invention" can be the basis for liability, but

only when the component "is especially made or especially adapted for use in the invention and not a staple article or commodity of commerce suitable for substantial noninfringing use"—a limitation that is absent from § 271(f)(1). 35 U.S.C. § 271(f)(2) (emphasis added). The fact that Congress used the phrase "any component" in § 271(f)(2), and then limited liability to the provision of a specialized component, is a strong reason to reject the Federal Circuit's re-writing of § 271(f)(1) as if it, too, used the phrase "any component."

Section 271(f)(1) also consistently refers to "components" in the plural, for instance providing for liability "where *such components are uncombined* in whole or in part," and are supplied to "induce the combination of *such components*." *Id.* § 271(f)(1). In marked contrast, § 271(f)(2) consistently refers to "component" in the singular, using language that is otherwise parallel to § 271(f)(1). For instance, § 271(f)(2) provides for liability "where *such component is uncombined* in whole or in part" and is supplied "intending that *such component* will be combined." *Id.* § 271(f)(2).

These differences in the language of § 271(f)(1) and (f)(2) are all the more revealing because the two subsections were drafted together, and added to the Patent Act as part of the same bill. 130 Cong. Rec. at 28069. Under these circumstances, the "differing language in the two subsections" should not be "ascribe[d] . . . to a simple mistake in draftsmanship" and given "the same meaning in each." *Russello* v. *United States*, 464 U.S. 16, 23 (1983). To the contrary, when § 271(f)(1) and (f)(2) are read side by side, it is clear that Congress chose not to expose domestic suppliers of a single component to liability

for foreign sales, so long as that component is a "staple article or commodity of commerce" with a "substantial noninfringing use." 35 U.S.C. § 271(f)(2).

The Federal Circuit eliminated this limitation, reasoning that the language of § 271(f)(2) should not inform its interpretation of § 271(f)(1) because "these two subsections employ the terms in different contexts." Pet. App. 30a. "The focus of the infringement inquiry under § 271(f)(1) is whether one or more components supplied by a party constitutes 'all or a substantial portion of the components of a patented invention . . . .'" *Id.* By contrast, according to the court, "the focus of the infringement inquiry under § 271(f)(2) is whether a party has supplied any component 'especially made or especially adapted for use in [a patented] invention'" that is not a "'staple article or commodity of commerce suitable for substantial noninfringing use.'" *Id.*

But these differing requirements under § 271(f)(1) and (f)(2) only further strengthen the implication that Congress intended the phrase "all or a substantial portion of the components" in (f)(1) to have a different meaning than the phrase "any component" in (f)(2). Under the Federal Circuit's interpretation, any component of an invention will constitute "a substantial portion of the components" if it is "important" to the invention. Pet. App. 34a. But every component that is "especially made or especially adapted for use" in an invention within the meaning of (f)(2) would qualify as an "important" component under the Federal Circuit's interpretation of (f)(1). See 22–23, *supra*. Thus, interpreting (f)(1) to provide liability for the supply of a single "important" component is a clear misconstruction of the statutory text that trivializes (f)(2).

The Federal Circuit's interpretation is also contrary to this Court's analysis in *Microsoft*. That decision expressly noted that § 271(f)(1) and (f)(2) "differ, among other things, on the quantity of components that must be 'supplie[d] . . . from the United States' for liability to attach." 550 U.S. at 454 n.16 (alteration and omission in original). In the same vein, this Court noted that "§ 271(f)(1) applies to the supply abroad of 'all or a substantial portion of' a patented invention's components," while "§ 271(f)(2) applies to the export of *even a single component* if it is 'especially made or especially adapted for use in the invention and not a staple article or commodity of commerce suitable for substantial noninfringing use.'" *Id.* at 458 n.18 (emphasis added). While *Microsoft* did not resolve the question presented, these remarks reflect that the natural reading of the text ascribes a *quantitative* meaning to the word "substantial" and preserves the specific standard Congress has established for the domestic supply of only a single component of a patented invention: (f)(1) applies only to a substantial quantity of components, and (f)(2) covers a single component, but only if it is especially adapted for infringement.

The Federal Circuit rejected this interpretation. It reasoned that it was "undermined by the very facts of *Microsoft*," because there the "alleged infringing activity under § 271(f) was a party's export of a single component of this two-component invention," but this Court did not resolve the case by holding "that liability under § 271(f)(1) requires the export of more than one component." Pet. App. 32a–33a (emphasis omitted). The parties in *Microsoft* did not argue that only a single component was involved, and the Court accordingly did not consider the issue; instead, it held

that the software in question was not a "component" at all, an analysis that did not "turn on whether [the Court] view[ed] the case under paragraph (1) or (2)." *Microsoft*, 550 U.S. at 454 n.16. Thus, while *Microsoft* did not resolve the specific issue presented here, the interpretation of § 271(f)(1) adopted by the Federal Circuit is in serious tension with the analysis this Court set forth.

2. Furthermore, just as with its interpretation of "actively induce," the Federal Circuit's interpretation of "a substantial portion" vastly broadens the extraterritorial reach of the statute, contrary to the presumption against extraterritoriality. Rather than limiting the reach of § 271(f) to instances where a supplied component is especially made for the invention, or where a large portion of the components are supplied, the Federal Circuit has expanded the reach of the statute to the supply of *any* single component that is deemed "important," which means nothing more than that the invention will not function without it. The standard is completely divorced from any way in which the component contributes to what is innovative about a product. A computer with an innovative chip that functions faster than previous chips cannot function without a plug or a battery. On the Federal Circuit's view, these stock "components" are "important" or "essential" to an invention that claims a computer with the innovative chip. Likewise, the *Taq* polymerase at issue here is a stock component that has been commonly used for decades to copy DNA; its function in the kit is in no way innovative. See 6, *supra*.

There is no "affirmative intention of the Congress clearly expressed" to give the statute such a broad

extraterritorial reach. *Morrison*, 561 U.S. at 255. To the contrary, as discussed above, there is express indication in § 271(f)(2) that Congress specifically chose not to interfere with the domestic supply of a single commodity component. And even if the statute could be considered ambiguous, courts cannot broaden the extraterritorial reach of a patent's market exclusivity based on "mere inference from ambiguous statutory language." *Deepsouth*, 406 U.S. at 531. The Federal Circuit should have resolved "[a]ny doubt" as to the reach of § 271(f) by applying "the presumption against extraterritoriality." *Microsoft*, 550 U.S. at 454. In again adopting "expansive interpretations of § 271(f)," Fernandes, *supra*, at 105, the Federal Circuit flatly disregarded this Court's instruction to apply the presumption and "resist giving the language in which Congress cast § 271(f) an expansive interpretation," *Microsoft*, 550 U.S. at 442.

3. Finally, review should be granted because of the profound importance of the question presented. The effects of the majority's misinterpretation of "substantial portion" mirror—and amplify—the effects of its misinterpretation of "actively induce." If this ruling is left in place, any domestic supplier of a commodity product used in patented inventions will be at risk of *worldwide* patent infringement liability for its sales. This would potentially include suits seeking injunctions that could disrupt the reliable flow of such commodity products to a foreign manufacturer, even where that country's law provides no basis for disrupting sales of the end product.

As a result, domestic manufacturers of all manner of products would face incentives to relocate their

operations offshore so that they could operate free of such risks and compete on a level playing field with foreign suppliers of commodity products. Thus, under the Federal Circuit's interpretation, patent law will create "one more incentive for U.S. companies who compete in foreign markets to move their manufacturing facilities abroad," Donald S. Chisum, *Normative and Empirical Territoriality in Intellectual Property: Lessons from Patent Law*, 37 Va. J. Int'l L. 603, 607 (1997), "treat[ing] U.S.-based companies worse than foreign companies" manufacturing the same components in foreign countries, Bernard Chao, *Patent Imperialism*, 109 Nw. U. L. Rev. Online 77, 88 (2014). This plainly was not Congress' intent.

Moreover, there is a serious danger that the Federal Circuit's extraterritorial expansion of U.S. patent law "would undermine the international system of national patents and lead to a type of U.S. patent imperialism." *Id.* at 86. Companies concerned about the manufacture and sale of products abroad could choose to sue for patent infringement in the U.S., "even if the other country has refused to award a patent for a particular invention and has consciously chosen to provide more modest recoveries to those that are awarded patents there." *Id.* at 87. "Clearly, the United States would be extremely upset if the circumstances were reversed and another country tried to impose its patent values on products made and sold in the U.S."; other countries will likely be no more pleased about the extraterritorial expansion of U.S. patent law, and may even retaliate by seeking to expand their patent laws to cover activities occurring in the U.S. *Id.*

Thus, the Federal Circuit's broadly extraterritorial interpretation risks "creat[ing] friction between States that, after having made deliberate policy

choices in the best interest of their citizens, offer differing degrees of patent protections." Jacob A. Schroeder, *So Long As You Live Under My Roof, You'll Live By . . . Whose Rules?: Ending the Extraterritorial Application of Patent Law*, 18 Tex. Intell. Prop. L.J. 55, 81 (2009). These potential consequences are all the more troubling when the Federal Circuit's errors are considered in combination; each significantly expands the extraterritorial scope of § 271(f)(1), but together they open a wide door for potentially crushing U.S. infringement liability for foreign conduct that is perfectly lawful where performed.

If U.S. patent law is going to be used to distort the incentives for companies to source commodity components from U.S. operations, and to create friction with foreign countries, any such "alteration should be made after focused legislative consideration, and not by the Judiciary forecasting Congress' likely disposition." *Microsoft*, 550 U.S. at 459. In short, as this Court has explained, if there is a "loophole" in the extraterritorial reach of the patent law, then it is "properly left for Congress to consider, and to close if it finds such action warranted." *Id.* at 457. The inherently delicate and political policy-making should not be undertaken by a divided panel of the Federal Circuit. This Court's review is needed; the petition should be granted.

CONCLUSION

For the foregoing reasons, the petition for a writ of certiorari should be granted.

Respectfully submitted,

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APPENDIX

APPENDIX A

UNITED STATES COURT OF APPEALS, FEDERAL CIRCUIT

Nos. 2013-1011, 2013-1029, 2013-1376

PROMEGA CORPORATION,
Plaintiff-Cross-Appellant,

and

MAX-PLANCK-GESELLSCHAFT ZUR FORDERUNG DER WISSENSCHAFTEN E.V.,
Plaintiff,

v.

LIFE TECHNOLOGIES CORPORATION, INVITROGEN IP HOLDINGS, INC., AND APPLIED BIOSYSTEMS, LLC,
Defendants-Appellants.

Dec. 15, 2014

Before PROST, Chief Judge, MAYER and CHEN, Circuit Judges.

Opinion

CHEN, Circuit Judge.

Life Technologies, Applied Biosystems, LLC, and Invitrogen IP Holdings, Inc. (collectively, LifeTech) appeal from the district court's grant of a motion for summary judgment that the asserted claims of United States Patent Nos. 5,843,660 ('660 patent), 6,221,598 ('598 patent), 6,479,235 ('235 patent), and 7,008,771

('771 patent) (collectively, the Promega patents) are not invalid for lack of enablement and obviousness. Promega Corp. and Max-Planck-Gesellschaft zur Förderung der Wissenschaften E.V. (collectively, Promega) appeal from a grant of a motion for judgment as a matter of law (JMOL) that LifeTech's accused products do not infringe either the Promega patents or U.S. Patent No. RE 37,984 (the Tautz patent), a motion that resulted in the vacatur of a jury's verdict of damages and willful infringement. Finally, LifeTech appeals from the district court's oral ruling that it is not licensed for all uses of the asserted patents under a license agreement with Promega (2006 Cross License).

For the reasons discussed herein, we conclude that the asserted claims of the Promega patents are invalid for lack of enablement. We also find substantial evidence that LifeTech is liable for infringement of the Tautz patent under both 35 U.S.C. § 271(a) and 35 U.S.C. § 271(f)(1). Finally, we affirm the district court's finding that the 2006 Cross License does not cover all of LifeTech's sales of the accused products. We therefore reverse the grant of LifeTech's motion for JMOL and remand to the district court for a determination of damages based on LifeTech's infringement of the Tautz patent.

I. BACKGROUND

DNA is a double-stranded molecule that encodes genetic instructions for living organisms. It consists essentially of two complementary strands of nucleotides. Particular nucleotide sequences may be repeated within a region of a DNA strand. For example, the DNA sequence ATT (adenine-thymine-thymine)

may be repeated ten times in a row in a particular location. Such repeating sequences are called "short tandem repeats" (STR), and the region of the DNA strand in which they occur is called an STR "locus."

STR loci occur frequently in the human genome. The number of repeated sequences within an STR locus varies highly from person to person. For example, one individual's DNA may have eleven ATT repeats at a given STR locus, while another individual may have fourteen at the same locus. These variations are referred to as "alleles," or markers, of the particular locus. Alleles are responsible for "polymorphism," or genetic differences between individuals.

No one allele varies enough to differentiate one person from another to a statistically significant degree. A particular set of alleles at multiple loci within an individual's DNA, however, can be used to create a DNA "finger-print" unique to that individual. This method of identification is called "STR profiling" and is useful in many fields, including forensic science.

STR profiling may require making copies of the loci of interest in order to obtain a detectable amount of DNA for analysis. This process is called "amplification," and can be accomplished with polymerase chain reaction (PCR). In PCR, a pair of "primers" effectively "flanks," or marks the start and finish of, the locus to be copied. Strands of DNA are then replicated between the primer pair by a DNA polymerase. This process is repeated until a sufficient number of copies of the desired STR locus are generated.

It is highly beneficial to amplify multiple STR loci simultaneously, creating a "multiplex" reaction or a co-amplification. Joint Appendix (J.A.) 1381.

Multiplexing, however, is more complicated than performing a series of individual, or "monoplex," amplifications. J.A. 1371. This is because a successful multiplex reaction depends on the selection of a set of primer pairs for which each primer pair not only flanks its respective target locus, but does not overlap—and thus interfere—with primer pairs for other targeted loci. *Id.* at 1372.

Identification of STR loci sets and primer pairs that successfully co-amplify is a trial and error process. In the early 1990s—the time of invention of the patents-in-suit—it is undisputed that scientists could not predict with any certainty, absent a preexisting publication or teaching, whether a given set of loci would successfully co-amplify. *Id.* This was true even when adding a new locus to an already successful multiplex, as skilled artisans could not predict "how the loci would interact with each other or how effectively and efficiently the primers would work in a single reaction [multiplex] environment." *Id.* It is also *undisputed* that the greater the number of STR loci sought to be amplified in a single reaction, the more complicated the process of creating a successful multiplex for that loci set. *Id.* For example, adding an eighth locus to a seven-loci multiplex (7-plex) was "more complicated" than adding a seventh locus to a six-loci multiplex (6-plex). *Id.* This was because in order to determine whether the loci would co-amplify successfully, it was necessary to "develop primer pairs that would co-amplify together and not interfere with each other[,] avoid undesirable results such as nonspecific amplification or primer-dimer formation[,] and adjust a number of reaction parameters such as temperature, the number of amplification cycles, and the concentration of primers, enzyme, buffer, dNTP, etc." *Id.* at 1372-73.

A. Patents-in-Suit

This case involves five patents that relate to multiplex amplification of STR loci. Promega owns the four Promega patents outright and is the exclusive licensee of the Tautz patent. The Promega patents claim methods or kits for simultaneously determining the alleles present in a set of STR loci from DNA samples, comprising: (a) obtaining a DNA sample; (b) selecting a set of loci of the DNA sample to amplify, including at least the specific loci recited in the claim; (c) co-amplifying the selected loci in a multiplex amplification reaction; and (d) evaluating the amplified alleles to determine the number of STR that are present at each loci. *See, e.g.*, '660 patent, claim 5; '235 patent, claim 1; '598 patent, claim 23; '771 patent, claim 5.

Each of the asserted claims[1] in the Promega patents includes a limitation that recites the phrase "a set of . . . loci" followed by a list of particular STR loci multiplexes of varying complexity, ranging from a 3-plex to a 14-plex. During claim construction, the district court construed the asserted claims with the transitional phrase "a set of . . . loci . . . consisting of" in the relevant limitation as "limited to products that use no loci other than those listed in the claims" (i.e., "closed loci set" claims),[2] and other claims with

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[1] Promega asserted infringement of claims 25, 27-31 of the '660 patent, claims 18-19 and 21-23 of the '235 patent, 10, 23-24, 27, and claim 33 of the '598 patent, claim 5 of the '771 patent, and claim 42 of the Tautz patent. *Promega Corp. v. Max-Planck-Gesellschaft zur Forderung der Wissenschaften E.V.*, No. 10-cv-0281-bbc, ECF No. 345, slip op. at 1356 (W.D.Wis. Nov. 29, 2011) (hereinafter, *Promega I*).

[2] The district court granted LifeTech's motion for summary judgment of noninfringement of the "closed loci set" claims

the transitional phrase "a set of . . . loci . . . comprising" in the relevant limitation as not so limited (i.e., "open loci set" claims). *Promega I*, slip op. at 1358-59. Claim 23 of the '598 patent is one such claim with an "open loci set" limitation:

> 23. A kit for simultaneously analyzing short tandem repeat sequences in a set of short tandem repeat loci from one or more DNA samples, comprising:
>
> A single container containing oligonucleotide primers for each locus in *a set of* short tandem repeat *loci* which can be co-amplified, *comprising* HUMCSF1PO, HUMTPOX, and HUMTH01.

'598 patent, 40:22-28 (emphasis added).

This claim recites an STR profiling kit with primers that can successfully co-amplify a set of three specific STR loci. Both parties agree that the claim requires successful co-amplification of every locus in the

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(claims 25 and 27-31 of the '660 patent), a decision that Promega did not appeal. *Promega I*, slip op. at 1350. Representative claim 25 of the '660 patent recites:

> 25. A kit for simultaneously analyzing short tandem repeat sequences in at least three loci, comprising a container which has oligonucleotide primers for co-amplifying *a set of* at least three short tandem repeat *loci*, wherein the set of loci are selected from the sets of loci *consisting of*:
>
> D3S1539, D19S253, D13S317;
>
> D10S1239, D9S930, D20S481;
>
> . . .
>
> D16S539, D7S820, D13S317, D5S818, HUMCSF1PO, HUMTPOX, HUMTH01, HUMvWFA31; and
>
> D16S539, D7S820, D13S317, D5S818, HUMF13A01, HUMFESFPS, HUMBFXIII, HUMLIPOL.

'660 patent, 67:35-68:13 (emphasis added).

claimed "a set of . . . loci." Because Promega used the word "comprising" in the "a set of . . . loci" limitation, the district court concluded that claim 23 covers not only the three loci recited in the claim, but also any other loci combination containing those three recited loci—whether that combination includes 13, 1,300 or 13,000 STR loci. *Promega I*, slip op. at 1353. The district court's construction of the "a set of . . . loci" limitation in claim 23 and the other asserted claims is not disputed on appeal.

The Tautz patent is likewise directed to a process for examining polymorphism in DNA samples. For example, the Tautz patent claims a kit for testing at least one STR locus that contains: (1) a mixture of primers; (2) a polymerizing enzyme such as *Taq* polymerase; (3) nucleotides for forming replicated strands of DNA; (4) a buffer solution for the amplification; and (5) control DNA. Claim 42 of the Tautz patent recites:

42. A kit for analyzing polymorphism in at least one locus in a DNA sample, comprising:

a) at least one vessel containing a mixture of primers constituting between 1 and 50 of said primer pairs;

b) a vessel containing a polymerizing enzyme suitable for performing a primer-directed polymerase chain reaction;

c) a vessel containing the deoxynucleotide triphosphates adenosine, guanine, cytosine and thymidine;

d) a vessel containing a buffer solution for performing a polymerase chain reaction;

e) a vessel containing a template DNA comprising i) a simple or cryptically simple nucleotide sequence having a repeat motif length of 3 to 10 nucleotides and ii) nucleotide sequences flanking said simple or cryptically simple nucleotide sequence that are effective for annealing at least one pair of said primers, for assaying positive performance of the method.

Tautz patent, 16:43-61.

B. Accused Products

LifeTech manufactures genetic testing kits that provide components for carrying out a multiplex amplification of STR loci from DNA samples. The kits contain a number of components, including: (1) a primer mix; (2) *Taq* polymerase; (3) PCR reaction mix including nucleotides; (4) a buffer solution; and (5) control DNA. Each of these kits is designed to successfully co-amplify STR loci combinations that include the recited loci listed in the asserted claims of the Promega patents as well as loci that are not listed in the claims. J.A. 1233-36. LifeTech manufactures one component of its kits in the United States, the *Taq* polymerase, which it ships overseas to a LifeTech manufacturing facility in the United Kingdom. J.A. 6288. This offshore facility assembles and sells the kits worldwide. Relevant here, LifeTech's STR kits are used by law enforcement agencies for forensic identification, and by clinical and research institutions for purposes such as analyzing cancer cells. J.A. 2265-66.

C. 2006 Cross License

In 2006, Promega and defendant Applied Biosystems[3] entered into a non-exclusive cross license agreement that granted Applied Biosystems the right to use the alleged inventions in the Promega patents and the Tautz patent for "Forensics and Human Identity Applications."[4] The 2006 Cross License limited Applied Biosystems' use of the patents-in-suit to, *inter alia*, activities relating to legal proceedings. J.A. 1868-69.

D. Procedural History

In 2010, Promega sued LifeTech for infringement of the Promega and the Tautz patents, alleging that Life-Tech sold STR testing kits not covered by the 2006 Cross License. LifeTech responded that it was licensed to practice all of the patents-in-suit and filed counterclaims that the asserted claims of the Promega patents were invalid. In September 2011, both parties cross-moved for summary judgment on infringement and invalidity. The district court rejected LifeTech's license defense to direct infringement, orally ruling that the license was limited to use in live forensic investigations conducted by police officers, and thus LifeTech's sales outside this field of use were infringing. *See* J.A. 1792.

The district court also ruled on summary judgment that LifeTech's sales of its STR kits for uses other than live forensic investigations conducted by police officers directly infringed claim 42 of the Tautz patent

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[3] Applied Biosystems was then part of Applera Corporation, but is now a wholly owned subsidiary of Life-Tech.

[4] The actual language of the 2006 Cross License is confidential and subject to a protective order, so we refer to the agreement only in broad terms.

and the claims of the Promega patents containing the "open loci set" limitation. *Promega I*, slip op. at 1356. In addition, the district court rejected LifeTech's enablement and obviousness challenges to the Promega patents. LifeTech did not challenge the validity of the Tautz patent. *Id.* at 30-32.

The case proceeded to a jury trial on willfulness and damages. During the trial, both parties stipulated that LifeTech grossed $707,618,247 in worldwide sales of its accused STR kits during the relevant five-and-a-half year period of infringement. J.A. 5478; 202. At the close of Promega's case-in-chief, a dispute arose between the parties about what Promega was required to prove during trial. Promega believed the issue of infringement was decided and it merely needed the jury to determine an appropriate amount of damages. LifeTech contended that Promega had confused the stipulated worldwide sales amount with actual damages available under the Patent Act, and that Promega had failed to satisfy its burden of proof as to which products and sales were eligible for damages under 35 U.S.C. § 271(a).[5] J.A. 5735-36. The district court acknowledged that there had been "a miscommunication between counsel, and that included me." J.A. 6190. It determined that although Promega "thought that it didn't have to put in any more [evidence about damages] than it already had," Promega's belief was "not correct." *Id.* However, it allowed Promega to present additional evidence in

[5] 35 U.S.C. § 271(a) states: "Except as otherwise provided in this title, whoever without authority makes, uses, offers to sell, or sells any patented invention, within the United States or imports into the United States any patented invention during the term of the patent therefor, infringes the patent."

its rebuttal case in order to attempt to correct this deficiency. *Id.*

Following the close of evidence, the district court asked the jury to answer the question: "[W]hat is the total dollar amount of Defendant's sales of STR kits that were United States sales as that term has been defined for you in the instructions?" J.A. 189. Over LifeTech's objection, the district court asked the jury to consider liability for both § 271(a) and § 271(f)(1), explaining that "United States sales" included "all kits made, used, offered for sale, sold within the United States or imported into the United States, as well as kits made outside the United States where a substantial portion of the components are supplied from the United States." *Id.* LifeTech challenged the inclusion of the § 271(f)(1) language and argued that that an alleged patent infringer (*i.e.*, LifeTech and its foreign manufacturing facility) could not induce itself within the meaning of the statute.

The jury returned a verdict of willful infringement and found that: (1) all of LifeTech's worldwide sales were attributable to infringing acts in the United States; (2) ten percent of those sales were for unlicensed uses; and (3) Promega was entitled to $52 million in lost profits. *See* J.A. 202-03. After the entry of judgment, LifeTech moved for JMOL on the ground that Promega "failed to prove the applicable damages for patent infringement." *Id.* at 2296. The district court granted LifeTech's motion, finding that Promega failed to present sufficient evidence to sustain a jury verdict under § 271(a) and § 271(f)(1). The district court vacated the prior finding of infringement and denied Promega's motion for reconsideration, or in the alternative, a new trial.

Both parties appealed. Promega challenges the district court's vacatur of the jury's verdict of willful infringement and award of damages, and in the alternative, the denial of its motion for a new trial. LifeTech challenges the district court's finding that the Promega patents are both enabled and nonobvious. LifeTech also challenges the district court's finding that it is not licensed to practice the patents-in-suit under the 2006 Cross License. We have jurisdiction under 28 U.S.C. § 1295(a)(1).

II. ANALYSIS

A. Standards of Review

Under the Seventh Circuit's standard, we review a grant of summary judgment *de novo*. *Dempsey v. Atchison, Topeka & Santa Fe Ry. Co.*, 16 F.3d 832, 836 (7th Cir.1994). Summary judgment is only proper when there are no disputed issues of material fact, even after viewing all reasonable inferences drawn from the record in the light most favorable to the nonmovant. *Id.* at 836.

Whether a claim satisfies the enablement requirement of 35 U.S.C. § 112, ¶ 1 is a question of law reviewed *de novo*.[6] *AK Steel Corp. v. Sollac*, 344 F.3d 1234, 1238-39 (Fed.Cir.2003). Any facts underlying the enablement determination are reviewed for clear error. *Id.* A party must prove invalidity based on

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[6] Paragraph 1 of 35 U.S.C. § 112 was replaced with newly designated § 112(a) when § 4(c) of the America Invents Act, Pub.L. No. 112-29, took effect on September 16, 2012. Because the applications resulting in the patents at issue in this case were filed before that date, we will refer to the pre-AIA version of § 112.

non-enablement by clear and convincing evidence. *Microsoft Corp. v. i4i Ltd. P'ship*, —— U.S. ——, 131 S.Ct. 2238, 2242, 180 L.Ed.2d 131 (2011).

We review motions for JMOL and for a new trial under regional circuit law. *Finjan, Inc. v. Secure Computing Corp.*, 626 F.3d 1197, 1202 (Fed.Cir.2010). In the Seventh Circuit, a grant of JMOL is reviewed "without deference, while viewing all the evidence in the light most favorable to the nonmoving party." *Trading Techs. Int'l v. eSpeed, Inc.*, 595 F.3d 1340, 1357 (Fed.Cir.2010) (citing *Harper v. Albert*, 400 F.3d 1052, 1061 (7th Cir.2005)). Denial of a motion for a new trial is reviewed for the abuse of discretion. *Huff v. Sheahan*, 493 F.3d 893, 899 (7th Cir.2007).

Finally, the licensing issues on appeal are governed by California law, pursuant to the choice of law clause in the 2006 Cross License. Under California law, interpretation of a contract is a judicial function reviewed *de novo*. *Cachil Dehe Band of Wintun Indians v. California*, 618 F.3d 1066, 1073, 1075 (9th Cir.2010).

B. Enablement of the Promega patents

The district court construed the asserted claims in the Promega patents with the "open loci set" limitation broadly, finding that the language of the claims "makes it clear that they are not limited to the recited loci because they all use the word 'comprising' when listing the loci." *Promega I*, slip op. at 1350. Thus, the district court concluded that "all of the asserted [open loci set] claims allow for unrecited loci." *Id.*

For example, claim 23 of the '598 patent recites an STR loci combination that *comprises* three specific loci. Under the district court's construction, claim 23 encompasses not only the 3-plex co-amplification

recited in the claims, but it also encompasses *any other larger, more complex multiplex reaction*, so long as it includes the three recited loci. Based on this construction—which is not disputed on appeal—LifeTech moved for summary judgment of invalidity of the asserted claims of the Promega patents for lack of enablement under § 112, ¶ 1. The district court denied LifeTech's motion, concluding that the asserted claims need not enable "unrecited elements." *Promega I*, slip op. at 1350, 1354.

The enablement requirement is set forth in 35 U.S.C. § 112, ¶ 1:

> The specification shall contain a written description of the invention, and the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same.

The enablement requirement ensures that "the public knowledge is enriched by the patent specification to a degree at least commensurate with the scope of the claims." *Nat'l Recovery Techs., Inc. v. Magnetic Separation Sys., Inc.*, 166 F.3d 1190, 1195-96 (Fed.Cir.1999). The scope of the claims must be "less than or equal to the scope of enablement." *Id.* at 1196.

Here, we disagree with Promega's characterization that unrecited STR loci combinations in the "open loci set" limitation of the asserted claims are merely "unrecited elements"; under the undisputed claim construction, they are part of the claim scope. In this field of technology, introducing even a single STR

locus to an existing loci multiplex significantly alters the chemistry of, and has an unpredictable effect on, whether the resulting multiplex will successfully co-amplify.

There is no genuine dispute that identifying STR loci multiplexes that will successfully co-amplify is a complex and unpredictable challenge, and as a result, undue experimentation may be required to identify a successfully co-amplifying multiplex that adds even a single new locus to an existing loci combination. To illustrate, Promega repeatedly argued to the United States Patent and Trademark Office (Patent Office) during prosecution that its then-pending claims were patentable because the prior art did not disclose "methods for selecting, co-amplifying, and evaluating the *specific sets* of short tandem repeat loci" recited in the claims. J.A. 1012 (emphasis added).[7] According to Promega, this lack of disclosure was critical, as the state of the art in this technology area "d[id] not disclose or suggest that any arbitrary combination of loci can be co-amplified without undue experimentation." J.A. 1225. Promega also stated that "multiplex amplification" of specific STR loci combinations disclosed in the prior art "cannot be extended to predict the success of multiplexing unrelated combinations of loci." *Id.* at 1224. Promega explained that this was because the prior art "clearly indicate[d] that each individual [STR] locus responds differently when subjected to the PCR using locus-specific primers." *Id.* at 1226. As a result, Promega stated that the prior art could not "provide any direction as to which of

[7] LifeTech collected over seventy similar representations to the Patent Office made by Promega during prosecution of the Promega patents. J.A. 1223-31.

many possible [STR loci combination] choices is likely to be successful." *Id.*

More specifically, Promega represented to the Patent Office that the addition of even a single locus to an existing loci combination rendered that new loci combination patentable. *See, e.g.*, J.A. 1226 (arguing a claim was patentable because "[o]ne of those four loci [disclosed in the prior art] is not included in the list of loci of claim 1 [of the '660 patent]."). For example, Promega argued that a claim reciting a 3-plex loci combination was patentable over prior art that disclosed only two of the three loci. J.A. 1230 ("No more than two of the STR loci disclosed in the [prior art reference] are included in any of the sets of at least three loci listed in step (b) of claim 21 [of the '598 and '235 patents] as amended."); *see also* J.A. 1227 ("[The prior art reference] fails to disclose the suitability of more than two of the loci listed in claim 1 [of the '660 patent]."). Thus, Promega argued that "the disclosure of some of the individual loci in the various [recited] sets of loci co-amplified" was insufficient to render a claim unpatentable. *See id.*

Promega pressed the same position when defending the validity of the Promega patents in this action. In particular, Promega argued that the loci multiplexes recited in its claims were new inventions even though they "comprised" prior art loci combinations that are subsets of its claimed STR loci. Promega justified its position by repeatedly describing the identification of new successfully co-amplifying STR loci combinations as "unpredictable." *E.g.*, Cross Appellant's Br. 8; [sic] 25, 61-62. In addition, Promega's expert opined that at the time of filing the parent application to the '598 patent, "any new STR multiplex . . . was inventive, even

where one added a single new locus to a pre-existing multiplex (e.g. adding a new locus to a multiplex of two loci to make a triplex; adding a new locus to a multiplex of three loci to make a quadruplex, etc.)." J.A. 715. Thus, Promega explained that without a preexisting publication or teaching, a skilled artisan "could not predict with any certainty . . . whether a given set of loci would co-amplify successfully together." J.A. 1358. Promega urged that "[t]he lack of these novel and unobvious locus combinations in the prior art, together with the unpredictable nature of this art, is fatal to [LifeTech's] obviousness arguments." *Id.* at 1360.

But when describing the scope of its claims for purposes of infringement, Promega sings a different tune. Despite the overwhelming evidence that the addition of a single locus to an existing loci combination can fundamentally transform the character of the resulting multiplex reaction, Promega argues that LifeTech's STR kits infringe its claims because *any and all* co-amplifying loci combinations that include the STR loci recited in the claims are encompassed by the claims. Promega has chosen broad claim language "at the peril of losing any claim that cannot be enabled across its full scope of coverage." *MagSil Corp. v. Hitachi Global Storage Techs., Inc.*, 687 F.3d 1377, 1381 (Fed.Cir.2012). Our previous decisions in *MagSil* and *Wyeth & Cordis Corp. v. Abbott Labs.*, 720 F.3d 1380 (Fed.Cir.2013), are instructive.

In *MagSil*, a patentee asserted infringement of a claim directed to a device used in computer hard drive disks that required a "change in resistance by at least 10%" between two electrodes on the device. 687 F.3d at 1379-80. The specification disclosed information sufficient to enable a skilled artisan to achieve a

change in resistance of 11.8%, and at the time of the invention, those in the field aspired to achieve changes in resistance of around 24%. *Id.* at 1381, 1383. Instead of tying the key claim limitation to what the specification enabled, the patentee sought to extend its scope in order to cover later-invented devices that achieved greater than 600% changes in resistance. *Id.* at 1383. To do so, the patentee contended that its claims encompassed the entire range of changes in resistance from 10% up to infinity because it had used standard "open claim" language that "d[id] not exclude additional, unrecited elements." *Id.* We rejected the patentee's argument because the specification of the patent "d[id] not contain sufficient disclosure to present even a remote possibility that an ordinarily skilled artisan could have achieved the modern dimensions of this art." *Id.* at 1382. We determined that "the specification enabled a marginal advance over the prior art," but did not support the infinite range of resistive changes encompassed by this claim limitation. *Id.*

Although the Promega patents recite specific sets of STR loci instead of an open-ended range as in *MagSil*, the claims at issue here are similar in that they cover the successful co-amplification of a virtually unlimited number of STR loci combinations (so long as they include the recited loci) through recitation of the "open loci set" limitation. And as in *MagSil*, we need not delineate the precise boundary at which Promega's claims are no longer enabled. It is sufficient to conclude, based on Promega's own statements, that the teachings of Promega's patents would not have enabled a skilled artisan at the time of filing to identify significantly more complicated sets of STR loci combinations that would successfully co-amplify—such as those found in LifeTech's STR kits—without

undue experimentation. Thus, like the patentee in *MagSil*, Promega's "difficulty in enabling the asserted claims is a problem of its own making." 687 F.3d at 1384.

In *Wyeth*, the patentee asserted infringement of claims covering a broad class of drug compounds with certain structures and properties. 720 F.3d at 1384-85. Although the specification disclosed only one species of the compound having these particular characteristics, the patentee nevertheless contended that its claims encompassed tens of thousands of other species within the genus that were not disclosed by the patent. *Id.* at 1382, 1384-85. The undisputed evidence, however, was that a skilled artisan could not determine whether a particular compound would exhibit the claimed properties without synthesizing and screening that compound, a "laborious" and "iterative" testing process. *Id.* at 1385.

Even if this testing process for any *one* compound would have been routine to a skilled artisan, we determined that practicing the *full scope* of the claims required "more than routine experimentation" because the specification disclosed "only a starting point for further iterative research in an unpredictable and poorly understood field." *Id.* at 1385-86. In particular, we noted that the specification was "silent" as to how to modify the disclosed compound "in a way that would preserve the recited utility." *Id.* at 1385. Further, even the patentee conceded that because of the unpredictable nature of the art, practicing the full scope of the claims would require testing each of the tens of thousands of potential species within the claimed genus. *Id.* As a result, we concluded that undue experimentation would have been required in

order to practice the full scope of the claims and thus the claims were invalid for lack of enablement. *Id.* at 1386.

While the claims of the Promega patents are not directed to a genus of compounds as in *Wyeth*, the claims at issue here similarly cover potentially thousands of undisclosed embodiments in an unpredictable field. And similar to *Wyeth*, the specification of the Promega patents provides only a starting point—specific STR loci combinations that successfully co-amplify—with no disclosure that would have allowed a skilled artisan, absent laborious testing, to add new loci to these recited STR loci combinations that would still successfully co-amplify. Undue experimentation is a matter of degree, and even "a considerable amount of experimentation is permissible," so long as it is "merely routine" or the specification "provides a reasonable amount of guidance" regarding the direction of experimentation. *Johns Hopkins Univ. v. CellPro, Inc.*, 152 F.3d 1342, 1360-61 (Fed.Cir.1998) (internal quotation omitted). But permissible routine experimentation "is not without bounds." *Wyeth*, 720 F.3d at 1386 (citation omitted). As the extensive evidence here demonstrates, undue experimentation would have been required in order to enable the full scope of coverage sought by Promega—the successful co-amplification of potentially thousands of unrecited STR loci combinations.

Promega argues that its "open loci set" limitations "permit" its claims to encompass a potentially limitless number of primers and multiplex reactions that are not enabled by the specification. Cross Appellant's Br. 55. Promega then seeks to shift the focus away from the particular facts of this case by contending

that nearly every claim using the transitional phrase "comprising" would be invalidated if we were to reject its position and agree with LifeTech. These fears are unfounded.

It is true that when used in the preamble of a claim, the term "comprising" permits the inclusion of other steps, elements, or materials in addition to the elements or components specified in the claims. *See In re Baxter*, 656 F.2d 679, 686 (CCPA 1981). As we stated in *Gillette Co. v. Energizer Holdings, Inc.*, 405 F.3d 1367, 1371 (Fed.Cir.2005), open claims "embrace technology that may add features to devices *otherwise within the claim definition* " (emphasis added). But the relevant usage of "comprising" here is not the one recited in the preamble. Rather, it is within the specific claim limitation that lists combinations of successfully co-amplifying STR loci, combinations whose identification and discovery Promega itself asserts is a complex and unpredictable endeavor. While the term "comprising" in a claim preamble may create a presumption that a list of claim elements is nonexclusive, it "does not reach into each [limitation] to render every word and phrase therein open-ended." *See Dippin' Dots, Inc. v. Mosey*, 476 F.3d 1337, 1343 (Fed.Cir.2007). Promega's claims differ from customary "open-ended" claims in that Promega's usage of "comprising" in its "open loci set" limitation, as construed, expands the claims at a key limitation in order to cover what are indisputably advances in this unpredictable art. Under the circumstances here, the numerous embodiments covered by Promega's claims cannot be merely regarded as "unrecited elements" in a standard "open-ended" claim.

Since the Promega patents do not enable a skilled artisan to practice the full breadth of this claim scope without undue experimentation, the challenged claims of the Promega patents are invalid for lack of enablement. Accordingly, we reverse the district court's denial of LifeTech's motion for summary judgment of invalidity of the four Promega patents for lack of enablement under § 112, ¶ 1 and vacate the district court's grant of Promega's motion for summary judgment of infringement for the Promega patents.[8]

C. Infringement under 35 U.S.C. § 271(f)(1)

Since the four Promega patents are invalid for lack of enablement, we need only address the district court's grant of LifeTech's motion for JMOL of noninfringement of the Tautz patent. As mentioned *supra*, LifeTech's accused genetic testing kits include a primer mix, a PCR reaction mix, a buffer solution, control DNA, and a polymerase (*Taq*), which is necessary for the PCR amplification. LifeTech manufactures this *Taq* polymerase component in the United States. LifeTech then ships this component to its facility in the United Kingdom for incorporation into its accused genetic testing kits, which are sold worldwide, including in the United States. *See* J.A. 2265-67.

As discussed *infra*, LifeTech admits that sales of these accused kits in the United States infringe the Tautz patent under 35 U.S.C. § 271(a). At trial, the jury also awarded lost profits to Promega based on *worldwide* sales of LifeTech's accused STR kits under

[8] Because the asserted claims of the Promega patents are invalid for lack of enablement, adjudication of LifeTech's obviousness challenge under 35 U.S.C. § 103 is unnecessary.

35 U.S.C. § 271(f)(1). The district court, however, granted LifeTech's motion for JMOL under Rule 50(b) of the Federal Rules of Civil Procedure that Promega failed to prove infringement under § 271(f)(1) as a matter of law. In particular, the district court held that (1) § 271(f)(1) requires the involvement of another, unrelated party to "actively induce the combination of components" and that no other party was involved in LifeTech's assembly of the accused kits, and (2) a "substantial portion of the components" requires at least two components to be supplied from the United States and that LifeTech supplied only a single component—the *Taq* polymerase—from the United States. *Promega Corp. v. Max-Planck-Gesellschaft zur Forderung der Wissenschaften E.V.*, No. 10-cv-0281-bbc, ECF No. 684, slip op. at 1343-49 (W.D.Wis. Sept. 13, 2012) (hereinafter, *Promega II*). On this narrow issue, we disagree with the district court's reading of § 271(f)(1). Moreover, substantial evidence supports the jury's finding that LifeTech's activities infringe the Tautz patent under a proper understanding of that statutory provision. Therefore, the district court erred in granting LifeTech's motion for JMOL.

Under 35 U.S.C. § 271(f)(1), a party may infringe a patent based on its participation in activity that occurs both inside and outside the United States. Section 271(f)(1) states:

> Whoever without authority supplies or causes to be supplied in or from the United States all or a substantial portion of the components of a patented invention, where such components are uncombined in whole or in part, in such manner as to actively induce the combination of such components outside of the United States in a

manner that would infringe the patent if such combination occurred within the United States, shall be liable as an infringer.

1. "Actively induce the combination"

We first address whether "to actively induce the combination" requires involvement of a third party or merely the specific intent to cause the combination of the components of a patented invention outside the United States. We conclude that no third party is required.

To begin, we acknowledge that the word "induce" can suggest that one is influencing or persuading "another." However, induce also encompasses the more broad concept of "to bring about, to cause." *See Promega II*, slip op. at 1347 (citing http://www.merriam-webster.com/dictionary/induce); *see also VII Oxford English Dictionary* 888 (2d ed.1989) ("[t]o bring about, bring on, produce, cause, give rise to"); *Am. Heritage Coll. Dictionary* 894 (4th ed.2000) ("[t]o bring about or stimulate the occurrence of; cause"). The object of the transitive verb "induce" can either be a person or a thing, such as an activity or result. The statute is written such that an activity—"the combination"—is the object of "induce," not a person. Had Congress wanted to limit "induce" to actions completed by two separate parties, it could easily have done so by assigning liability only where one party actively induced *another* "to combine the [patented] components." Yet, "another" is absent from § 271(f)(1).[9] Instead, the focus of the statute is

[9] In this respect, § 271(f)(1) discusses inducement unlike other areas of the law, where statutes describe the inducement of "another person," "any individual," or a third party. *See, e.g.*, statutes involving extortion (N.Y. State Penal Law ¶ 155.05(2)(e)

to induce "the combination of the components of the patented invention."

Nor does the concept of a third party appear in the legislative history for the § 271(f) amendment, which focuses on the would-be infringer's action of supplying components overseas. The legislative history explains: "In order to be liable as an infringer under paragraph (f)(1), one must supply or cause to be supplied 'all or a substantial portion' of the components in a manner that would infringe the patent if such combination occurred within the United States." *Section-by-Section Analysis: Patent Law Amendments of 1984*, 130 Cong. Rec. 28,069 (1984) *as reprinted in* 1984 U.S.C.C.A.N. 5827, 5828 (hereinafter, "Legislative History").

Congress enacted § 271(f) in response to a "loophole" brought to its attention by the Supreme Court's decision in *Deepsouth Packing Co. v. Laitram Corp.*, 406 U.S. 518, 92 S.Ct. 1700, 32 L.Ed.2d 273 (1972). Legislative History, 1984 U.S.C.C.A.N. at 5828. In *Deepsouth*, the Fifth Circuit affirmed an injunction barring use of an infringing shrimp deveining machine within the United States. 406 U.S. at 519, 92 S.Ct. 1700. The infringer subsequently began making the parts of its enjoined shrimp deveining machine in

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("A person obtains property by extortion when he compels or *induces another person* to deliver such property to himself or to a third person. . . .") (emphasis added)); pandering (D.C.Code § 22-2705("(a) It is unlawful for any person, within the District of Columbia to: (1) Place or cause, *induce*, entice, procure, or compel the placing of *any individual* in the charge or custody of any other person, or in a house of prostitution, with intent that such individual shall engage in prostitution") (emphasis added)); child delinquency (FL Act § 827.04 ("Contributing to the delinquency or dependency of a child; penalty.—(1) Any person who: (b) *Induces or endeavors to induce*, by act, threat, command, or persuasion, *a child*. . . .") (emphasis added)).

the United States, then exported those parts to its foreign buyers, who would ultimately assemble and use the completed machines abroad. *Id.* at 523-24, 92 S.Ct. 1700. The Supreme Court found that the unassembled export of the elements of the infringing shrimp deveining machine did not infringe the patent, which required the completed combination of those elements. *Id.* at 528-29, 92 S.Ct. 1700. The Court determined that without a "clear and certain signal from Congress," it was not prepared to expand the rights of patent holders to include an "extraterritorial effect." *Id.* at 531, 92 S.Ct. 1700.

Congress responded to *Deepsouth* by enacting § 271(f). Section 271(f) closed the *Deepsouth* "loophole" by expanding the reach of the patent statute to capture certain domestic precursors to extraterritorial activity not previously considered as infringing. In terms of its policy goals, § 271(f)(1) sought to "prevent copiers from avoiding United States patents by supplying components of a patented product in this Country so that the assembly of the components may be completed abroad." Legislative History, 1984 U.S.C.C.A.N. at 5828.

To achieve these goals, Congress chose language for § 271(f)(1) broader than the particular facts of *Deepsouth*. For example, although *Deepsouth* involved the supplying of patented components to unrelated third party customers, Congress did not limit the reach of § 271(f)(1) to "third parties" or "another." In addition, although *Deepsouth* involved the supply of *all* the components of a patented invention, Congress chose to expand liability to the supply of "all or a substantial portion" of the components, discussed *infra*. Given Congress' choice of broadening language—which focuses solely on the activity abroad ("the combination") rather than the actor performing the

combination—and acknowledgment of "the need for a legislative solution to close a loophole" identified in *Deepsouth*, Legislative History, 1984 U.S.C.C.A.N. at 5828, it is unlikely that Congress intended § 271(f)(1) to hold companies liable for shipping components overseas to third parties, but not for shipping those same components overseas to themselves or their foreign subsidiaries.[10]

LifeTech argues that "to actively induce the combination" requires involvement of a third party based on its interpretation of the phrase "actively induces infringement" in the context of 35 U.S.C. § 271(b). *See, e.g., Global-Tech Appliances, Inc. v. SEB SA*, —— U.S. ——, 131 S.Ct. 2060, 2065, 179 L.Ed.2d 1167 (2011). In *Global-Tech*, the Supreme Court, in deciding a different issue, uses language that assumes the presence of a second person as a direct infringer where there *was* such a person.[11] That assumption is quite natural for induced infringement under § 271(b), since a single party who causes the infringement of a patent would already be strictly liable for infringement under § 271(a). However, because § 271(f)(1) lacks such a strict liability companion statute, comparisons to § 271(b) are of limited value.

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[10] We are mindful of the fact that the Supreme Court has cautioned against the extraterritorial application of United States laws. *See, e.g., Deepsouth*, 406 U.S. at 531, 92 S.Ct. 1700. But in this instance, Congress' chosen language assigns liability to LifeTech's conduct within the United States, based on its extraterritorial effect.

[11] None of the cases cited by the dissent had to confront the question of statutory construction we face here.

2. "Substantial portion of the components of a patented invention"

We next address whether infringement under § 271(f)(1) requires at least two components to be supplied from the United States. Section 271(f)(1) assigns infringement to anyone who supplies or causes to be supplied "*all or a substantial portion* of the components of a patented invention." We hold that there are circumstances in which a party may be liable under § 271(f)(1) for supplying or causing to be supplied a single component for combination outside the United States. And based on the facts of this particular case, we conclude that substantial evidence supports the jury's verdict that LifeTech is liable for infringement under § 271(f)(1) for shipping the *Taq* polymerase component of its accused genetic testing kits to its United Kingdom facility.

As with our analysis for "to actively induce the combination," we begin by examining the ordinary meaning of the text of the statute. *See FDIC v. Meyer*, 510 U.S. 471, 476, 114 S.Ct. 996, 127 L.Ed.2d 308 (1994). The dictionary definition of "substantial" is "important" or "essential." *Webster's Third New Int'l Dictionary* 2280 (2002); *XVII Oxford English Dictionary* 67 (2d ed.1989) ("essential; material"); *see also Am. Heritage Coll. Dictionary* 1727 (4th ed.2000) ("considerable in importance . . ."). A "portion" is defined as a "section or quantity within a larger thing; a part of a whole." *Am. Heritage Coll. Dictionary* 1066 (4th ed.2000); *XII Oxford English Dictionary* 155 (2d ed.1989) ("[a] part of any whole"). Nothing in the ordinary meaning of "portion" suggests that it necessarily requires a certain quantity or that a single component cannot be a "portion" of a multi-component invention. Rather, the ordinary meaning of

"substantial portion" suggests that a single important or essential component can be a "substantial portion of the components" of a patented invention.

None of LifeTech's arguments persuade us otherwise. First, LifeTech contends that the reference to "components" in its plural form in the statute indicates that more than one "component" must be supplied outside the United States for § 271(f)(1) to apply.[12] *Promega II*, slip op. at 1344. LifeTech ignores, however, that the statute assigns infringement liability when a party supplies "*all or a substantial portion* of the components of a patented invention"—not merely the "components of a patented invention." Subsequent references within the statute to "such components" are clearly references to "the components of a patented invention," not to what must be "supplied" by the alleged infringer. To illustrate, the statute assigns liability to a party who "actively induce[s] the combination of *such components* outside of the United States *in a manner that would infringe the patent* if such combination occurred within the United States." The term "such components" must refer to the components "of a patented invention," and not to what is "supplied," as only the combination of all "components of a patented invention" results in infringement. In order to reference what must be "supplied" by the alleged infringer within the natural grammatical structure of the statute, Congress would have had to reference "such *all or a substantial portion*," not "such components." In short, LifeTech's

[12] We note that LifeTech's interpretation ignores the Dictionary Act, which instructs that "words importing the plural [can] include the singular." 1 U.S.C. § 1.

reading of "such components" is inconsistent with the grammatical structure of the statute.

LifeTech next compares § 271(f)(1) with § 271(f)(2), arguing that Congress used the plural "components" in subsection (f)(1) and the singular "component" in subsection (f)(2) for a reason.[13] However, these two subsections employ the terms in different contexts, and thus the use of "component" in § 271(f)(2) does not control the meaning of "components" in § 271(f)(1). The focus of the infringement inquiry under § 271(f)(1) is whether one or more components supplied by a party constitutes "all or a substantial portion of the components of a patented invention" and if so, whether the alleged infringer "actively induce[d] the combination" of those components. On the other hand, the focus of the infringement inquiry under § 271(f)(2) is whether a party has supplied any component "especially made or especially adapted for use in [a patented] invention" that is not a "staple article or commodity of commerce suitable for substantial noninfringing use."[14]

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[13] Section 271(f)(2) recites: "Whoever without authority supplies or causes to be supplied in or from the United States *any component* of a patented invention that is especially made or especially adapted for use in the invention and not a staple article or commodity of commerce suitable for substantial noninfringing use, where such component is uncombined in whole or in part, knowing that such component is so made or adapted and intending that such component will be combined outside of the United States in a manner that would infringe the patent if such combination occurred within the United States, shall be liable as an infringer" (emphasis added).

[14] Promega does not assert infringement under § 271(f)(2) because *Taq* polymerase is "a staple article or commodity of commerce suitable for substantial non-infringing use." *See* J.A. 6289.

LifeTech also contends that *Microsoft v. AT & T Corp.*, 550 U.S. 437, 127 S.Ct. 1746, 167 L.Ed.2d 737 (2007), supports its interpretation of § 271(f)(1). In *Microsoft*, an alleged infringer exported the "master version" of its accused operating system software overseas with the intent that the software would be copied by and installed on foreign manufacturers' computers, computers that were eventually sold to foreign customers. 550 U.S. at 445-46, 127 S.Ct. 1746. This operating system software incorporated a speech processing function that allegedly infringed the patentee's claims. *Id.* at 441, 127 S.Ct. 1746. On the facts before it, the Supreme Court addressed two specific questions: (1) "when, or in what form, does software qualify as a 'component' under § 271(f)"; and (2) whether "components" of the foreign-made computers were "supplie[d]" from the United States. *Id.* at 447, 127 S.Ct. 1746. The Supreme Court held that abstract software code "detached from an activating medium" such as a CD-ROM was not a "component" that could trigger infringement liability under § 271(f) because it was merely an "idea without physical embodiment." *Id.* at 449, 127 S.Ct. 1746. The Court also held that the copies of the accused software made by foreign manufacturers outside the United States were not "supplied" from the United States for purposes of § 271(f). *Id.* at 453-54, 127 S.Ct. 1746.

LifeTech points to two footnotes of the Supreme Court's opinion comparing the language of § 271(f)(1) with § 271(f)(2). First, the Court observed that the two subsections "differ, among other things, on the quantity of components that must be 'supplie[d] . . . from the United States' in order for liability to attach." *Microsoft*, 550 U.S. at 454 n. 16, 127 S.Ct. 1746. LifeTech ignores the next two sentences of the Court's opinion, however, which state: "Paragraph (2),

like (1), covers only a 'component' amenable to 'combination'" and "Paragraph (2), *like (1)*, encompasses only the 'suppl[y] . . . from the United States' of 'such [a] component' as will itself 'be combined outside of the United States.'" *Id.* (emphases added). This language tends to support the conclusion that § 271(f)(1) may apply when a single "component" is involved.

Second, the Supreme Court observed that "§ 271(f)(2) applies to the export of even a single component if it is 'especially made or especially adapted for use in the invention and not a staple article or commodity of commerce suitable for substantial noninfringing use.'" *Microsoft*, 550 U.S. at 454 n. 18, 127 S.Ct. 1746. LifeTech appears to argue that the Court's use of the phrase "single component" in § 271(f)(2) by implication means that § 271(f)(1) applies only to multiple components. But LifeTech ignores the preceding sentence of the opinion, in which the Supreme Court observes that, in contrast, "§ 271(f)(1) applies to the supply abroad of 'all or a substantial portion of' a patented invention's components." *Id.* Again, this footnote does not suggest that § 271(f)(1) differs from § 271(f)(2) in that it necessarily requires the export of more than one component.

Moreover, LifeTech's interpretation of these two footnotes is undermined by the very facts of *Microsoft*. In *Microsoft*, the patented invention involved the combination of at least two components: operating system software and a computer. 550 U.S. at 441-42, 127 S.Ct. 1746. The alleged infringing activity under § 271(f) was a party's export of a *single* component of this two-component invention—either a "master disk" or an "electronic transmission" containing the accused operating system software. *Id.* at 446, 127 S.Ct. 1746.

The patentee did not specify which subsection of § 271(f) was triggered by the alleged infringer's activity, and for "clarity's sake," the Supreme Court focused its analysis on the text of § 271(f)(1). *Id.* at 447 n. 7, 127 S.Ct. 1746. Although the "electronic transmission" was determined not to be a "component," neither party argued—and the Supreme Court never suggested—that liability under § 271(f)(1) did not attach merely because the single component of a master disk or electronic transmission could not be a "substantial portion" of the components of the patented invention. In short, the Supreme Court in *Microsoft* could have decided the patentee's challenge by finding, or at least instructing, that liability under § 271(f)(1) requires the export of more than one component of a patented invention. It did not. In the absence of express guidance by the Supreme Court, we will not contravene the ordinary reading of the statute and categorically exclude the "supply" of a single component of a patented invention from the scope of § 271(f)(1).

Our determination that liability under § 271(f)(1) may attach for export of a single component does not end the inquiry, however. According to the statute, this component must be "a substantial portion" of the components of the patented invention. Here, we find substantial evidence to support the jury's conclusion that the *Taq* polymerase supplied by LifeTech from the United States to its foreign facility is a "substantial portion" of the components of the LifeTech's accused genetic testing kits.

Claim 42 of the Tautz patent recites five components: a primer mix, a polymerizing enzyme (such as *Taq* polymerase), nucleotides, a buffer solution,

and control DNA. Tautz patent, 16:43-61. LifeTech's domestic arm supplies[15] the *Taq* polymerase to its facility in the United Kingdom, which both manufactures the remaining four components and assembles all the components into the accused STR kits. J.A. 2265-67, 6288. *Taq* polymerase is an enzyme used to amplify the DNA sequences in order to obtain enough replicated sample for testing. J.A. 6281. Without *Taq* polymerase, the genetic testing kit recited in the Tautz patent would be inoperable because no PCR could occur. LifeTech's own witness admitted that the *Taq* polymerase is one of the "main" and "major" components of the accused kits. J.A. 6290-91. In short, there is evidence in the record to support the jury's finding that a polymerase such as *Taq* is a "substantial portion" of the patented invention.

In sum, we disagree with the district court that a single component supplied from the United States, no matter how important or central to the invention, can never constitute "a substantial portion of the components of a patented invention." The evidence demonstrates that LifeTech supplied a substantial portion of the patented invention—the polymerase—to its overseas facility as a component of its accused genetic testing kits. Further, whether LifeTech exhibited the necessary knowledge and intent to combine the *Taq* polymerase with the remaining components of its genetic testing kit "in a manner that would infringe" the Tautz patent if that combination occurred within the United States is not contested and is presumed. There is substantial evidence in the

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[15] LifeTech either purchases *Taq* polymerase from a third-party in the United States or produces *Taq* polymerase itself in an Austin, Texas facility. J.A. 6281-83.

record to support the jury's finding that LifeTech is liable for infringement under 35 U.S.C. § 271(f)(1).

D. Infringement under 35 U.S.C. § 271(a)

The district court also granted LifeTech's motion for JMOL of noninfringement of the Tautz patent under § 271(a) because it believed Promega did not offer evidence that LifeTech's accused products were made, used, offered for sale, or sold in the United States. Though the district court acknowledged that Promega had introduced evidence that at least some of LifeTech's accused products infringed under § 271(a), it granted LifeTech's motion because Promega had not shown that *all* its sales were infringing. We reverse the district court.

At trial, LifeTech admitted that some of the sales of its accused genetic testing kits in the United States were "technically an infringement" of Promega's patents. J.A. 5127. LifeTech also admitted that Promega was "entitled to be compensated for [LifeTech's] infringement." *Id.* Promega presented evidence to the jury showing sales of LifeTech's accused kits in the United States. *See* J.A. 7031-7170, 7362-7744, 7906-8002 (LifeTech sales records); J.A. 6249-68 (LifeTech testimony explaining the sales records). Based on LifeTech's own admissions, which are supported by evidence in the record, we conclude that LifeTech's kits made, used, or sold in the United States infringe the Tautz patent under 35 U.S.C. § 271(a). Because substantial evidence supports the jury's finding that LifeTech's accused kits infringe the Tautz patent under both § 271(a) and § 271(f)(1), we reverse the district court's grant of LifeTech's motion for JMOL of noninfringement of the Tautz patent.

E. 2006 Cross License

The 2006 Cross License is a limited field-of-use license for "Forensics and Human Identity Applications." Appellant's Br. 9. California state law provides: "The language of a contract is to govern its interpretation, if the language is clear and explicit, and does not involve an absurdity." Cal. Civ.Code § 1638. During a hearing before trial, the district court issued an oral ruling that the scope of the 2006 Cross License was limited to sales of LifeTech's STR kits used during "live" forensic investigations conducted by law enforcement agencies, and did not cover sales of the STR kits used for forensic research, education, and training at universities and other non-law enforcement bodies. J.A. 1792.

LifeTech contends that because forensic research, education and training are necessary parts of any "live" forensic investigation by a law enforcement agency, the 2006 Cross License also covers STR kits used by universities and other parties for any purpose related to forensic research, education, and training.[16] For example, Life-Tech argues that any educational use of its STR kits is for "Forensics and Human Identity Applications" of law enforcement agencies because "the forensics student is learning specifically how to use the very kits that will be used for legal proceedings, and *cannot* use those kits in legal proceedings if he or she has not been trained on them." Appellant's Br. 59.

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[16] In its Reply Brief, LifeTech argued for the first time that it has broader licensing rights to the Tautz patent based on a 1996 agreement. Reply Br. 8. We will not consider this untimely argument.

We are not persuaded by LifeTech's creative interpretation of the 2006 Cross License. LifeTech's desire to expand the scope of the license to authorize certain unspecified applications contradicts the express language of the agreement, which grants LifeTech a limited field-of-use license for "forensics and paternity." J.A. 1868-69. The district court correctly determined that the plain language of the 2006 Cross License's "Forensic and Human Identity Applications" field-of-use provision does not extend to research, education, and training. As the district court summarized in its oral ruling, "defendants want [the 2006 Cross License] to apply to every research project going on in the world that had anything to do with genetics, no. No. Doesn't work." *Id.* at 1792.

* * *

We have considered all other arguments presented by the parties and find them unpersuasive.

III. CONCLUSION

For the foregoing reasons, we conclude that the challenged claims of the four Promega patents are invalid under 35 U.S.C. § 112, ¶ 1 for lack of enablement, and thus reverse the district court's denial of LifeTech's motion for summary judgment of invalidity. Because substantial evidence supports the jury's finding that LifeTech infringed the Tautz patent under both 35 U.S.C. § 271(a) and 35 U.S.C. § 271(f)(1), we reverse the district court's grant of JMOL of noninfringement as to the Tautz patent. We affirm the district court's ruling that certain sales of LifeTech's accused STR kits are not covered by the 2006 Cross License. Since the challenged claims of four of the five asserted patents on which the jury based its damages verdict are invalid, we vacate the jury's damages award.

We also vacate the district court's denial of Promega's motion for a new trial, and we remand to the district court to determine damages due to LifeTech's infringement of the Tautz patent.

AFFIRMED-IN-PART, REVERSED-IN-PART, VACATED-IN-PART, AND REMANDED.

COSTS

No costs.

Dissenting-in-part opinion filed by Chief Judge PROST.

PROST, Chief Judge, dissenting-in-part.

While I join Sections I-II.B and II.D-II.E of this opinion, I respectfully dissent from Section II.C in which the majority determines that LifeTech can be held liable for infringement of the Tautz patent under 35 U.S.C § 271(f)(1). The opinion concludes that LifeTech "actively induce[d]" itself (i.e., its U.K. subsidiary) to make the patented combination in the U.K. *See* Majority Op. at 1351–53. However, I read § 271(f)(1) and its requirement of active inducement to necessarily mean inducement of *another*. Indeed, we have never before held—in the context of either § 271(f) or § 271(b)—that a party can induce itself to infringe. And for good reason: this conclusion runs counter to unambiguous Supreme Court precedent. Therefore, contrary to the majority, I conclude that LifeTech cannot be held liable for infringing the Tautz patent under § 271(f)(1).[1]

Twice the Supreme Court has held that inducement liability requires a third party. In interpreting the phrase "induces infringement" in § 271(b), the Supreme Court wrote that it requires "that the inducer lead *another*" or "persuade *another*." *Global-Tech Appliances, Inc. v. SEB SA*, — U.S. —, 131 S.Ct. 2060, 2065, 179 L.Ed.2d 1167 (2011) (emphases added). Additionally, in *Metro-Goldwyn-Mayer Studios Inc. v. Grokster, Ltd.*, a case in the

[1] Because I find that the district court properly decided that LifeTech is not liable under § 271(f)(1) for active inducement, I would not reach the alternative argument that LifeTech is not liable under § 271(f)(1) because it only supplied a single component.

analogous copyright context,[2] the Supreme Court stated that inducement is defined as "entic[ing] or persuad[ing] *another*" to infringe. 545 U.S. 913, 935, 125 S.Ct. 2764, 162 L.Ed.2d 781 (2005) (emphasis added). The majority cannot point to a single case—from the Supreme Court or otherwise—that supports its contrary interpretation of inducement.

Our en banc court has also made similar statements regarding inducement under § 271(b). For example, in *DSU Medical Corp. v. JMS Co.*, we ruled that inducement requires proof: (1) "of culpable conduct, directed to encouraging *another's* infringement"; (2) that the defendant "actively and knowingly aid[ed] and abet[ted] *another's* direct infringement"; and (3) "that the alleged infringer knowingly induced infringement and possessed specific intent to encourage *another's* infringement." 471 F.3d 1293, 1305-06 (Fed.Cir.2006) (en banc) (emphases added). And in *Lucent Technologies, Inc. v. Gateway, Inc.*, we stated that "inducement requires evidence of culpable conduct, directed to encouraging *another's* infringement." 580 F.3d 1301, 1322 (Fed.Cir.2009) (emphasis added); *see also Wordtech Sys. v. Integrated Networks Solutions*, 609 F.3d 1308, 1315 (Fed.Cir.2010) (same).

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[2] The Supreme Court has explained it is most appropriate to draw an analogy between copyright cases and patent cases "because of the historic kinship between patent law and copyright law." *Sony Corp. of Am. v. Universal City Studios, Inc.*, 464 U.S. 417, 439, 104 S.Ct. 774, 78 L.Ed.2d 574 (1984); *see also Therasense, Inc. v. Becton, Dickinson & Co.*, 649 F.3d 1276, 1295 (Fed.Cir.2011) ("[T]he most analogous area to patent law is copyright.").

The majority rests its analysis on the legislative history surrounding the enactment of § 271(f). Even assuming that reliance on legislative history is appropriate in this circumstance, the majority ignores the most relevant part of the legislative history: "the term 'actively induce'" in § 271(f)(1) was expressly "drawn from existing subsection 271(b)[.]" 130 Cong. Rec. 28,069 (1984) (statement of Rep. Kastenmeier, inserting a section-by-section analysis of H.R. 6286). It is a "standard principle of statutory construction that identical words and phrases within the same statute should normally be given the same meaning." *Powerex Corp. v. Reliant Energy Servs., Inc.*, 551 U.S. 224, 232, 127 S.Ct. 2411, 168 L.Ed.2d 112 (2007). As Congress expressly based § 271(f)(1) on § 271(b), that principle of statutory construction has special force here.

Further, the majority focuses on the fact that it is illogical to hold companies liable for shipping components to third parties overseas while simultaneously permitting companies to ship those same components overseas to either itself or its subsidiaries. The majority states that it is "unlikely" that Congress intended this result. *See* Majority Op. at 1353. Maybe. Maybe not. More importantly, however, the majority imputes from Congress' supposed intent to close the *Deepsouth* loophole a much broader legislative intent to close all loopholes related to extraterritorial liability. This is improper. Congress replaced *Deepsouth* with the statutory language of § 271(f), not some amorphous "intent." In these circumstances it is hardly our role as judges to surmise or divine what Congress may or may not have foreseen or desired, and to act as its surrogate.

Indeed, the Supreme Court rejected such an aggressive methodology when it resolved *Deepsouth Packing Co. v. Laitram Corp.*, 406 U.S. 518, 92 S.Ct. 1700, 32 L.Ed.2d 273 (1972). Facing a loophole in the statutory scheme, the Supreme Court in *Deepsouth* held that no law prohibited an entity from avoiding infringement by shipping components of a patented device for assembly outside the United States. And what happened next? Congress stepped in and superseded *Deepsouth* by enacting § 271(f). *See* 130 Cong. Rec. 28,065-69 (1984).

But I need not even look to *Deepsouth*. I also follow the clear guidance from the Supreme Court in *Limelight Networks, Inc. v. Akamai Technologies, Inc.*, —— U.S. ——, 134 S.Ct. 2111, 189 L.Ed.2d 52 (2014). There, the Court explained that "when Congress wishes to impose liability for inducing activity that does not itself constitute direct infringement, it knows precisely how to do so. The courts should not create liability for inducement of non-infringing conduct where Congress has elected not to extend that concept." *Id.* at 2118.

Finally, the Supreme Court has cautioned against employing a policy-oriented approach to judicial decision making when it would cause law to have extraterritorial application. Specifically, in *Microsoft Corp. v. AT & T Corp.*, the Supreme Court noted that Congress did not address all gaps when it drafted § 271(f) and, therefore, the Supreme Court chose to "leave in Congress' court" the broader, extraterritorial "patent-protective determination" the patentee sought in that case. 550 U.S. 437, 458, 127 S.Ct. 1746, 167 L.Ed.2d 737 (2007). The Supreme Court warned that "[i]f the patent law is to be adjusted[,] . . . the alteration should be made after focused legislative

consideration, and not by the Judiciary forecasting Congress' likely disposition." *Id.* at 458-59, 127 S.Ct. 1746. Because we are limited by the language of the statute, Supreme Court precedent, and our own precedent, I respectfully dissent from the portion of the majority's opinion addressing § 271(f)(1).

APPENDIX B

IN THE UNITED STATES DISTRICT COURT
FOR THE WESTERN DISTRICT OF WISCONSIN

10-cv-281-bbc

PROMEGA CORPORATION,
Plaintiff,

and

MAX-PLANCK-GESELLSCHAFT ZUR FORDERUNG DER WISSENSCHAFTEN E.V.,
Involuntary Plaintiff,

v.

LIFE TECHNOLOGIES CORPORATION, INVITROGEN IP HOLDINGS, INC. AND APPLIED BIOSYSTEMS, LLC,
Defendants.

OPINION and ORDER

Plaintiff Promega Corporation sued defendants Life Technologies Corporation, Applied Biosystems, LLC and Invitrogen IP Holdings, Inc. for infringing and inducing infringement of five patents related to the copying of sequences of a DNA strand. The action grew out of a licensing agreement between the parties under which defendants Life Technologies and Applied Biosystems could sell plaintiff's patented products within certain permitted fields; plaintiff alleged that defendants were making, using and selling products into fields such as clinical diagnostics, clinical research and research markets, which were

not covered by the licensing agreement. A jury found in plaintiff's favor and awarded more than $50 million in damages. Dkt. #567.

Various motions from both sides are now before the court. Plaintiff seeks enhanced damages, attorney fees, costs and a permanent injunction. Dkt. ##593, 594, 599 and 601. Defendants argue that they are entitled to judgment in their favor, both because they proved their equitable defenses of estoppel and laches and because plaintiff failed as a matter of law to prove infringement under either of the theories it asserted at trial. In the alternative, they ask for various limitations on plaintiff's damages and for a new trial. Dkt. ##578, 580, 582, 584, 586 and 588.

Although I am persuaded that defendants failed to prove their equitable defenses, I agree with them that they are entitled to judgment as a matter of law under Fed. R. Civ. P. 50 because plaintiff failed to prove infringement under 35 U.S.C. § 271(a) or (f)(1), the only two theories plaintiff is asserting. The parties agree that plaintiff's evidence at trial relied on the assumption that *all* of the accused products defendants sold during the relevant time frame (between August 29, 2006 and the end of January 2012) were made in the United States, imported into the United States or made with a substantial portion of components from the United States, as required by § 271(a) and (f)(1). Because plaintiff failed to submit admissible evidence at trial showing that all the sales at issue satisfied one or more of these requirements, I cannot sustain the verdict. In addition, plaintiff failed to show that defendants engaged in active inducement, which is a separate requirement of § 271(f)(1). Accordingly, I am granting defendants'

Rule 50 motion and directing the clerk of court to enter judgment in their favor.

OPINION

I. EQUITABLE DEFENSES

Defendants seek judgment on their equitable defenses (and counterclaims) of estoppel and laches, which must be decided by the court. *Agfa Corp. v. Creo Products Inc.*, 451 F.3d 1366, 1375 (Fed. Cir. 2006). Before trial, I questioned defendants' failure to raise these defenses at summary judgment, but I concluded that the defenses were not waived, in accordance with circuit law. Dkt. #486 at 2-3 (citing *Diversey Lever, Inc. v. Ecolab, Inc.*, 191 F.3d 1350 (Fed. Cir. 1999), and *Pandrol USA, LP v. Airboss Railway Products, Inc.*, 320 F.3d 1354 (Fed. Cir. 2003)). I did not hold a separate trial on the defenses because defendants represented to the court that all of their evidence related to the defenses would be presented during the jury trial. Dkt. #520 at 2. Defendants have not altered that position now, but both sides have submitted briefs on the question whether the evidence at trial proved that plaintiffs' infringement claims should be dismissed under one or both defenses.

A. Equitable Estoppel

To prevail on their estoppel defense, defendants must prove three elements: (1) plaintiff engaged in "misleading conduct" that led defendants to believe reasonably that plaintiff did not intend to enforce the patents against defendants; (2) defendants relied on that conduct; and (3) defendants would be materially prejudiced if the plaintiff were permitted to proceed with its charge of infringement. *Aspex Eyewear Inc. v. Clariti Eyewear, Inc.*, 605 F.3d 1305, 1310 (Fed. Cir.

2010). Because I conclude that defendants have failed to prove the first element, I need not consider the other two.

Defendants do not argue that plaintiff made any misleading statements to them. Rather, defendants say that plaintiff misled them by failing to object to their allegedly illegal sales even though it knew that defendants were infringing by making sales that were not authorized under the terms of the parties' 2006 license.

A patentee's inaction may constitute misleading conduct, but it "must be combined with other facts respecting the relationship or contacts between the parties to give rise to the necessary inference that the claim against the defendant is abandoned. . . . In the most common situation, the patentee specifically objects to the activities currently asserted as infringement in the suit and then does not follow up for years." *A.C. Aukerman Co. v. R.L. Chaides Construction Co.*, 960 F.2d 1020, 1042 (Fed. Cir. 1992). *See also Aspex Eyewear*, 605 F.3d at 1310 (finding estoppel when plaintiff failed to take action against defendant after accusing it of infringement); *ABB Robotics, Inc. v. GMFanuc Robotics Corp.*, 52 F.3d 1062, 1064 (Fed. Cir. 1995) (objection of infringement by parent company followed by silence); *Hottel Corp. v. Seaman Corp.*, 833 F.2d 1570, 1574 (Fed. Cir. 1987) ("In the cases that have applied intentionally misleading silence in the patent infringement context, a patentee threatened immediate and vigorous enforcement of its patent right but then did nothing for an unreasonably long time."). In this case, defendants cite no evidence that plaintiff's inaction was preceded by a threat to sue or an accusation of infringement.

Defendants rely on a nonpatent case in which the court found that a contractor was equitably estopped from suing the Secretary of the Navy for failing to submit orders by mail rather than electronically, even though the contract at issue required mail delivery. *Mabus v. General Dynamics C4 Systems, Inc.*, 633 F.3d 1356, 1361-63 (Fed. Cir. 2011). In that case, the court concluded that the contractor had misled the Navy by accepting 13 electronically delivered orders before refusing later orders submitted in the same way. Defendants argue that the situation in this case is similar because plaintiff continued accepting royalty payments under the licensing agreement even though plaintiff sold kits that its customers used for purposes not permitted by the licensing agreement.

Even if I assume that accepting royalty payments for unlicensed sales could be a ground for estoppel, defendants' reliance on *Mabus* is misplaced because they have failed to meet their burden to show that plaintiff *knew* it was accepting payments for unlicensed sales. Randall Dimond, plaintiff's vice president, testified that he was not aware that defendants were selling outside the licensed fields until the fall of 2009, only a few months before plaintiff filed this lawsuit. Tr. Trans., dkt. #544, at 18. Defendants cite no statements from plaintiff showing that it was aware that defendants were failing to limit the use of its kits to licensed purposes. Rather, they ask the court to infer plaintiff's knowledge from various pieces of evidence, such as testimony that plaintiff and defendant Life Technologies both had representatives on a committee that discussed Life's use of kits for cell line authentication (a non-licensed use), testimony from one of defendants' employees that "customers" told "us" that plaintiff told the customers that defendants' Identifiler kit was "overkill," Ortuno Dep.,

dkt. #348, at 144, and testimony from one of defendants' experts in this case that he had used defendants' unlicensed kits. Even if I assume that this evidence is admissible, it is simply too speculative to prove that plaintiff misled defendants into reasonably believing that it would not enforce its rights under the patent. Accordingly, I conclude that defendants have failed to prove their equitable estoppel defense and counterclaim.

B. Laches

To prevail on their laches defense and counterclaim, defendants must prove that plaintiff "delayed filing suit for an unreasonable and inexcusable length of time from the time it knew or reasonably should have known of its claim" and the delay prejudiced defendants. *Hearing Components, Inc. v. Shure Inc.*, 600 F.3d 1357, 1375 (Fed. Cir. 2010). Again, this defense fails because defendants have not shown that, before filing this lawsuit, plaintiff knew or should have known for an unreasonable amount of time that defendants were infringing its patent. Defendants cite no case in which a court concluded that a party was entitled to a laches defense under similar circumstances. Accordingly, I am dismissing this defense as well.

II. MOTION FOR JUDGMENT AS A MATTER OF LAW

At summary judgment, I concluded that various kits defendants sold infringed one or more claims of the five patents at issue in this case. Dkt. #345. The issue at trial was whether defendants had engaged in particular behavior that violated any provisions of the patent statute. That issue was less straightforward than in some patent infringement cases because

defendants claimed that many of their kits were assembled and sold outside the United States. Generally, foreign sales are outside the scope of the patent statute.

Plaintiff relied on two theories of infringement at trial. First, it argued that defendants sold accused products that included components supplied from the United States, in violation of 35 U.S.C. § 271(f)(1). Second, it argued that the accused products were manufactured in or imported into the United States, in violation of 35 U.S.C. § 271(a). The jury found that all of the accused products defendants sold during the relevant time frame satisfied the requirements for one or both of these provisions.

In their renewed motion under Fed. R. Civ. P. 50(b), defendants argue that the evidence plaintiff presented was not legally sufficient to sustain the jury's verdict under either theory. When reviewing a motion filed under Rule 50, the court must consider "the record as a whole to determine whether the evidence presented, combined with all reasonable inferences permissibly drawn therefrom, is sufficient to support the verdict when viewed in the light most favorable to the party against whom the motion is directed." *Clarett v. Roberts*, 657 F.3d 664, 674 (7th Cir. 2011). *See also Koito Manufacturing Co. v. Turn-Key-Tech, LLC*, 381 F.3d 1142, 1148 (Fed. Cir. 2004) (regional circuit law applies to standard under Rule 50 motions). Because this standard was not met for either of plaintiff's theories of infringement, I am granting defendants' motion.

A. 35 U.S.C. § 271(f)(1)

Under § 271(f)(1),

> [w]hoever without authority supplies or causes to be supplied in or from the United States all or a substantial portion of the components of a patented invention, where such components are uncombined in whole or in part, in such manner as to actively induce the combination of such components outside of the United States in a manner that would infringe the patent if such combination occurred within the United States, shall be liable as an infringer.

Defendants argue that plaintiff failed to prove that a "substantial portion of the components" of the accused products was supplied from the United States, that defendants "actively induce[d]" the combination of components or that they did so "in a manner that would infringe the patent if such combination occurred within the United States." I will consider each of these contentions in turn.

1. Substantial portion of components

Neither side attempts to provide a comprehensive interpretation of the meaning of the word "substantial." However, defendants argue that, even when the evidence is considered in the light most favorable to plaintiff, it showed at most that *one* component of all the accused products, a polymerase, was supplied from the United States and that a single component is not a "substantial portion" as a matter of law. Although defendants do not deny that plaintiff adduced evidence that *some* of the accused products include two components from the United States, defendants say

that does not help plaintiff because plaintiff did not attempt to quantify the sales of those accused products that included at least two components from the United States. Rather, plaintiff adduced evidence only as to defendants' *total* worldwide sales, so defendants are entitled to judgment as a matter of law unless all of those sales fall under § 271(a) or (f)(1).

Plaintiff does not dispute defendants' last point, so I consider that to be conceded. However, plaintiff says that defendants' interpretation of § 271(f)(1) is wrong (because a single component may be "substantial") and their view of the facts is wrong as well (because a reasonable jury could find that at least two components of all of the accused products came from the United States). In addition, defendants say that plaintiff waived any argument that one component is not substantial by failing to raise it in a motion under Fed. R. Civ. P. 50(a).

a. Waiver

I disagree that defendants waived an argument regarding the proper interpretation of § 271(f)(1). In their Rule 50(a) motion, defendants argued that

> the statute requires that [plaintiff] prove a substantial portion of the components of the patented invention. I would submit, Your Honor, that for the Identifiler Kit that [plaintiff] went through the bill of materials on, there is evidence that could go to the jury for that kit. But [plaintiff] base[s] [its] entire 271(f)(1) analysis on all the remaining kits on the fact that they contained Taq DNA polymerases and that does not meet the burden of showing all or a substantial portion of the components as to those other kits.

Tr. Trans., dkt. #572, at 74. That was sufficient to put plaintiff on notice of defendants' position that a single component (the polymerase) is not a "substantial portion" of components, which is all that defendants were required to do. *Extreme Networks, Inc. v. Enterasys Networks, Inc.*, 2008 WL 4756498, *1 (W.D. Wis. 2008) (Rule 50(a) motion "must be specific enough to give notice to the plaintiff of the hole in its case so that it can attempt to put in more evidence while there is still an opportunity to do so"); *see also Exxon Shipping Co. v. Baker*, 554 U.S. 471, 486 n.5 (2008) ("motion under Rule 50(b) is not allowed unless the movant sought relief on similar grounds under Rule 50(a) before the case was submitted to the jury").

Plaintiff points out that defendants did not cite case law when making their Rule 50(a) motion, but I have never interpreted the rule to impose such an exacting burden on a party and plaintiff cites no authority to support that view. If plaintiff had additional evidence that the accused products included multiple domestic components, defendants' Rule 50(a) motion was fair warning that plaintiff should come forward with that evidence before submitting its case to the jury. Failing to cite case law does not rob the other side of an opportunity to fill the hole in its case. Case law citations might have persuaded plaintiff of the *necessity* of presenting additional evidence, but it was not defendants' burden to convince plaintiff to try harder, only to give it a chance to do so. Further, courts are not obligated to ignore controlling law simply because the parties fail to cite it, *Elder v. Holloway*, 510 U.S. 510 (1994); *In re Aqua Dots Products Liability Litigation*, 654 F.3d 748, 752 (7th Cir. 2011), so it would make little sense to prohibit parties from supporting their positions with additional authority in a Rule 50(b) motion.

b. Is a single component sufficient?

With respect to the merits, plaintiff acknowledges that § 271(f)(1) consistently uses the plural term "components." However, it argues that each use of "components" in the provision is referring to the components of the invention as a whole rather than the components from the United States. For example, plaintiff says that it makes more sense to read the phrase "where such components are uncombined in whole or in part" as a reference to the components of all of the invention rather than just the part or parts that come from the United States because, otherwise, "[o]ne could avoid infringement under 271(f)(1) by simply combining those components of the patented invention that are to be supplied from the United States prior to shipment." Plt.'s Br., dkt. #616, at 17.

Plaintiff's reading is plausible if one reads § 271(f)(1) in isolation, but it becomes less so when viewed in conjunction with the similarly worded § 271(f)(2):

> Whoever without authority supplies or causes to be supplied in or from the United States any component of a patented invention that is especially made or especially adapted for use in the invention and not a staple article or commodity of commerce suitable for substantial noninfringing use, where such component is uncombined in whole or in part, knowing that such component is so made or adapted and intending that such component will be combined outside of the United States in a manner that would infringe the patent if such combination occurred within the United States, shall be liable as an infringer.

35 U.S.C. § 271(f)(2).

Like § 271(f)(1), § 271(f)(2) targets products that may be manufactured and sold overseas, but include parts from the United States. For the purpose of this case, the primary difference is that § 271(f)(2) extends to "any component" of the invention rather than "all or a substantial portion of the components." (Plaintiff did not argue at trial that defendants' sales violated § 271(f)(2), presumably because it did not believe it could prove that any component was "especially made or especially adapted for use in the invention and not a staple article or commodity of commerce suitable for substantial noninfringing use," which is an additional element in § 271(f)(2).)

Similarly to § 271(f)(1), § 271(f)(2) uses the phrase "where such component is uncombined in whole or in part." In that instance, the reference to the singular "component" must be to a component that is "supplied in or from the United States" rather than to the invention as a whole because § 271(f) does not apply to single component inventions. Further, because § 271(f)(1) employs the same phrasing as § 271(f)(2) ("where such components are uncombined in whole or in part"), it follows that the term "such components" in § 271(f)(1) refers to the components from the United States as well. *Nken v. Holder*, 556 U.S. 418, 426 (2009) ("[S]tatutory interpretation turns on 'the language itself, the specific context in which that language is used, and the broader context of the statute as a whole'") (quoting *Robinson v. Shell Oil Co.*, 519 U.S. 337, 341 (1997)).

As defendants point out, this conclusion is supported by the case law. In *Microsoft Corp. v. AT&T Corp.*, 550 U.S. 437, 454 n.16 (2007), the Supreme Court discussed § 271(f)(1) and (2), concluding that

"the two paragraphs differ, among other things, on the quantity of components that must be 'supplie[d] . . . from the United States' for liability to attach." Because § (f)(2) applies to a single component, the Court's statement that § (f)(1) and § (f)(2) "differ . . . on the quantity" of components, suggests that § (f)(1) requires that more than one component must come from the United States. More generally, the Court concluded that it was improper to use policy concerns about "loopholes" to justify broad interpretations of the patent statute, both because any "loophole" in the statute "is properly left for Congress to consider, and to close if it finds such action warranted," *id.* at 457, and because of the presumption that "our patent law operates only domestically and does not extend to foreign activities," so that any provision extending the patent law's reach into foreign territory must be construed narrowly. *Id.* at 455 (internal quotations omitted and alterations). Thus, even if plaintiff is correct that it would be easier for competitors to avoid infringement under a narrow interpretation, that is not a ground for expanding the reach of the statute.

Defendants cite two other federal cases in which a court concluded that § 271(f)(1) did not extend to inventions that include only one component from the United States: *Ormco Corp. v. Align Technology, Inc.*, 609 F. Supp. 2d 1057, 1073 (C.D. Cal. 2009); *Bristol-Myers Squibb Co. v. Rhone-Poulenc Rorer, Inc.*, No. 95 CIV 8833, 2001 WL 1263299, at *4 (S.D.N.Y. Oct. 19, 2001). Plaintiff cites no authority to the contrary. Accordingly, I conclude that a single component is not sufficient to satisfy § 271(f)(1).

Even if § 271(f)(1) did not require multiple components to come from the United States in all cases, it seems unlikely that one component could constitute a "substantial" portion in this case when plaintiff does not dispute defendants' position that the accused products are made up of no fewer than five components. Dkt. #581 at 8. Although plaintiff points to testimony that the polymerase is a "major" component of the accused products, dkt. #558, at 45-46, it does not quantify "major" or otherwise explain what it means.

c. Is there sufficient evidence of multiple components?

Alternatively, plaintiff argues that a reasonable jury could find that all of the accused products include two or more components from the United States. (Because defendants do, I will assume that two components are a substantial portion.) First, plaintiff cites Dimond's answer of "no" to the question, "Has anyone at Life Technologies ever contradicted the comment that Dr. Moehle made to you that these products are made or their components are made in the United States?" Tr. Trans., dkt. #555, at 61. However, because the question assumes various facts, Dimond's one-word answer establishes nothing. As defendants point out, counsel's question is referring to earlier testimony by Dimond that, "[a]t the time of that agreement [the 2006 cross license], I was informed by Dr. Moehle [an employee of defendants] that all of their products were made in the United States." Tr. Trans., dkt. #545, at 27. Even if I assume that Moehle has personal knowledge of where defendants' products were made, Dimond's testimony is unhelpful, both because it is so vague, referring generally to "products" rather than particular components, and because it is irrelevant where defendants made their components when the

parties entered their agreement in 2006. Particularly because Sandulli testified that multiple components of the accused products have been manufactured in the United Kingdom in recent years, Tr. Trans., dkt. #558, at 38-46, Dimond's vague testimony cannot carry the day for plaintiff.

Second, plaintiff relies on the designated deposition testimony of Michelle Shepherd, another employee of defendants, who said that "[c]omponents of the kits are manufactured in" the United States. Dkt. #551-1, at 129. When asked to specify which components, she said, "[t]he allelic ladders." *Id.* However, it is not reasonable to infer from this testimony that all of the accused products defendants sold worldwide since 2006 included allelic ladders. Again, Shepherd's testimony is vague; she does not provide any time frame. This is a problem in light of Sandulli's more specific testimony that defendants manufactured allelic ladders in the United States in the past, but no longer do so. Tr. Trans., dkt. #558, at 46. In addition, Shepherd did not testify that all of the accused kits included allelic ladders. Rather, when asked about the origins of a kit ordered in Germany, she said that she was "only able to speak to the U.S. shipping and manufacturing," dkt. #551-1 at 130, so it is impossible to infer from her testimony anything about the origin of components in kits shipped outside the United States. I conclude that plaintiff failed as a matter of law to prove that all of the accused products from 2006 to 2012 included a "substantial portion" of components from the United States.

2. Actively induce

Defendants argue that plaintiff failed to meet the element of active inducement for two reasons: (1) plaintiff did not adduce evidence regarding inducement of a third party; and (2) plaintiff did not adduce evidence that defendants "shipped components for assembly abroad with the intention of subverting the U.S. patent laws or otherwise culpably encouraged acts that would be acts of infringement if they occurred in the United States." Dfts.'s Br., dkt. #581. The second argument was not included in defendants' Rule 50(a) motion and it is not developed in the Rule 50(b) motion, so the argument is waived.

Plaintiff does not argue that defendants waived the first argument except to say that defendants cite new cases in their Rule 50(b) motion. (Although plaintiff does argue that defendants failed to ask for an instruction regarding active inducement, that argument is relevant only to defendants' motion for a new trial under Fed. R. Civ. P. 59.) As I explained above, I do not read Rule 50 as prohibiting parties from buttressing their arguments with supplemental authority in their renewed motions for judgment as a matter of law. In their Rule 50(a) motion, defendants stated that

> [t]here's no specific acts or circumstances from which the jury could infer that defendants actively induced a third party to assemble or use the kits in a manner that would have infringed if done in the United States. The statute requires that they be—one element is that in such a manner as to actively induce the combination of such components outside the United States in a

> manner that would infringe the patent if such combination occurred within the United States and so you can't induce yourself to do that.

Tr. Trans., dkt. #572, at 74. That was sufficient to preserve the issue.

The parties agree that plaintiff did not present any evidence at trial that defendants induced another party to combine any components outside the United States in an infringing manner. Rather, defendants did all the combining themselves. Thus, the question is whether the term "actively induce" requires the involvement of a third party or whether defendants may "induce" themselves under the statute.

Because the ordinary meaning of the word "induce" is to influence or persuade, http://www.merriam-webster.com/dictionary/induce, it makes little sense in common parlance to say that someone "induced himself" to perform a particular action. The more natural reading of the word is that it involves an action taken with respect to a third party, encouraging another to do something. As defendants point out, this is consistent with the way the Court of Appeals for the Federal Circuit has used the term in the context of 35 U.S.C. § 271(b). *DSU Medical Corp. v. JMS Co., Ltd.*, 471 F.3d 1293, 1305 (Fed. Cir. 2006) ("[I]nducement requires evidence of culpable conduct, directed to encouraging another's infringement."); *Manville Sales Corp. v. Paramount Systems, Inc.*, 917 F.2d 544, 553 (Fed Cir. 1990) ("It must be established that the defendant possessed specific intent to encourage another's infringement."); *Water Technologies Corp. v. Calco, Ltd.*, 850 F.2d 660, 668 (Fed. Cir. 1988) ("[A] person infringes [under § 271(b)] by actively and knowingly aiding and abetting another's direct infringement.").

Plaintiff does not deny that "active inducement" under § 271(b) requires the involvement of a third party. It simply says in a footnote that the cases defendants cite "are not on point" because they did not involve the interpretation of § 271(f)(1). Plt.'s Br., dkt. #616, at 8 n.6. This is true, but not helpful. Courts generally assume that the same phrase in the same statute means the same thing. *Powerex Corp. v. Reliant Energy Services, Inc.*, 551 U.S. 224, 232 (2007) ("A standard principle of statutory construction provides that identical words and phrases within the same statute should normally be given the same meaning."). Although that canon is not without its exceptions, defendants cite both legislative history and controlling case law supporting the view that the phrase "active inducement" means the same thing in both §§ 271(b) and 271(f)(1). *Liquid Dynamics Corp. v. Vaughan Co., Inc.*, 449 F.3d 1209, 1222 (Fed. Cir. 2006) (applying § 271(b) standard for active inducement in case brought under § 271(f)(1)); Section-by-Section Analysis of H.R. 6286, Patent Law Amendments Act of 1984," [sic] Congressional Record, Oct. 1, 1984, H10525–26 ("The term 'actively induce' is drawn from existing subsection 271(b) of the patent law, which provides that whoever actively induces patent infringement is liable as an infringer.").

As it did with respect to its interpretation of "substantial portion," plaintiff argues that it would create an undesirable loophole in the statute to construe "actively induce" as requiring a third party. This is plaintiff's strongest argument. As plaintiff points out, when defendants made their Rule 50(a) motion, I expressed doubt "that Congress intended to leave a loophole for anybody who did its own combinations of components outside the borders of the country."

Tr. Trans., dkt. #572, at 75. Although I still believe it makes little sense to prohibit a party from supplying another with components while permitting the party to supply itself, I am persuaded that the loophole is not one that a court is empowered to close.

As I noted above, the Supreme Court has admonished lower courts not to engage in "dynamic judicial interpretation" of § 271(f) in order to avoid perceived loopholes. *Microsoft*, 550 U.S. at 457. In particular, the Court said that courts should keep in mind the particular problem § 271(f) was intended to address:

> Section 271(f) was a direct response to a gap in our patent law revealed by this Court's *Deepsouth [Packing Co. v. Laitram Corp.*, 406 U.S. 518 (1972),] decision. See supra, at 1752, and n. 3. The facts of that case were undeniably at the fore when § 271(f) was in the congressional hopper. In *Deepsouth*, the items exported were kits containing all the physical, readily assemblable parts of a shrimp deveining machine (not an intangible set of instructions), and those parts themselves (not foreign-made copies of them) *would be combined abroad by foreign buyers*. Having attended to the gap made evident in *Deepsouth*, Congress did not address other arguable gaps.

Id. at 457-58 (emphasis added). Because the facts of *Deepsouth* involved inducement of a third party, this counsels against a broader interpretation of § 271(f) that would include other factual scenarios, even if policy considerations suggest that the statute should apply regardless what party is combining the components overseas.

I cannot accept plaintiff's interpretation of § 271(f)(1) in the face of all the reasons not to. These include the facts of *Deepsouth*, the Supreme Court's instruction to construe § 271(f) narrowly, the Federal Circuit's interpretation of the relevant phrase, the legislative history of § 271(f), the canon to interpret the same words in the same way and the ordinary meaning of the word "induce." It is particularly telling that plaintiff fails to address in its brief any of the reasons undermining its position. It may well be that Congress would have chosen its words differently had it contemplated the loophole it left open, but courts must apply statutes as they are written, not as the court believes they should have been written. Thus, plaintiff's failure to adduce any evidence that it induced the actions of a third party is a second and independent reason for concluding that plaintiff failed as a matter of law to prove its claim under § 271(f)(1).

3. In a manner that would infringe the patent

Defendants' final argument under § 271(f) is that their combination of components could not render them liable for violating that provision because their assembly of the accused products was permitted under the license agreement. Certain *sales* fell outside the scope of the agreement, but § 271(f)(1) does not address sales, only assembly.

I agree with plaintiff that defendants waived this argument by failing to present it in their Rule 50(a) motion. Defendants say that they preserved this issue by quoting the relevant language in the statute and arguing that plaintiff failed to satisfy it, but that is not sufficient because it fails to identify the particular problem. *Extreme Networks*, 2008 WL 4756498 at *1 ("Defendant cannot preserve all possible arguments

simply by listing the elements of a claim and arguing generally that the plaintiff did not meet them."). However, because I have concluded that plaintiff failed to meet the elements that a "substantial portion" of the components came from the United States and that defendants "actively induced" the combination of those components, defendants' waiver of another element does not change the result.

B. 35 U.S.C. § 271(a)

Alternatively, plaintiff argues that all of defendants' sales violated § 271(a), which provides: "whoever without authority makes, uses, offers to sell, or sells any patented invention, within the United States or imports into the United States any patented invention during the term of the patent therefor, infringes the patent." In particular, plaintiff says that the jury could have found that all of the accused products are made in or imported into the United States.

With respect to § 271(a), plaintiff relies entirely on Shepherd's testimony. However, she admitted she did not know where all the kits were made. Tr. Trans., dkt. #551-1, at 129 ("I'm not certain there—all of these varieties of AmpFLSTR kits are assembled in Foster City [California]. They may be assembled in Warrington [the United Kingdom]."). And, as noted above, she admitted she did not know whether foreign orders came through the United States. *Id.* ("I'm only able to speak to the U.S. shipping and manufacturing."). Accordingly, even if the jury were to ignore all the evidence that many of the accused products are not made in or imported into the United States, it could not find reasonably from Shepherd's testimony that all of defendants' sales infringed under § 271(a).

Plaintiff has failed to point to evidence that would sustain a finding that all of the accused products defendants sold between August 2006 and January 2012 would meet the requirements of § 271(a) or (f)(1). Because plaintiff did not adduce evidence regarding defendants' sales of any subset of products that would meet those requirements, defendants are entitled to judgment as a matter of law. In addition, because plaintiff did not seek a new trial on damages in the event the court reached this conclusion, that issue is waived.

ORDER

IT IS ORDERED that

1. The equitable defenses and counterclaims filed by defendants Life Technologies Corporation, Applied Biosystems, LLC and Invitrogen IP Holdings, Inc. are DISMISSED for defendants' failure to prove these defenses and counterclaims.

2. Defendants' motion for judgment as matter of law regarding 35 U.S.C. § 271(a) and (f)(1), dkt. #580, is GRANTED.

3. The following motions are DENIED as moot: (a) defendants' motion for judgment as a matter of law on lost profits calculations, dkt. #578; (b) defendants' motions for a new trial, dkt. ##580, 582, 584 and 586; (c) defendants' motion for judgment as a matter of law on nonwillfulness, dkt. #588; (d) plaintiff Promega Corporation's motion for an "exceptional case" finding under 36 U.S.C. § 285, dkt. #594; (e) plaintiff's motion for enhanced damages, dkt. #599; (f) plaintiff's

motion for a permanent injunction, dkt. #601; and (f) plaintiff's bill of costs. Dkt. #593.

4. The clerk of court is directed to enter judgment in favor of defendants and close this case.

Entered this 12th day of September, 2012.

BY THE COURT:
/s/
BARBARA B. CRABB
District Judge

APPENDIX C

NOTE: This order is nonprecedential

UNITED STATES COURT OF APPEALS
FOR THE FEDERAL CIRCUIT

[Filed: 02/26/2015]

2013-1011, -1029, -1376

PROMEGA CORPORATION,
Plaintiff-Cross-Appellant,

AND

MAX-PLANCK-GESELLSCHAFT ZUR FORDERUNG
DER WISSENSCHAFTEN E.V.,
Plaintiff,

v.

LIFE TECHNOLOGIES CORPORATION, INVITROGEN IP
HOLDINGS, INC., AND APPLIED BIOSYSTEMS, LLC,
Defendants-Appellants.

Appeals from the United States District Court for the Western District of Wisconsin in No. 10-CV-0281, Chief Judge Barbara B. Crabb

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ON PETITION FOR PANEL REHEARING AND REHEARING EN BANC

Before PROST, Chief Judge, NEWMAN, MAYER,* LOURIE, DYK, MOORE, O'MALLEY, REYNA, WALLACH, TARANTO, CHEN, and HUGHES, Circuit Judges.

PER CURIAM.

ORDER

Appellants Life Technologies Corporation, et al., filed a combined petition for panel rehearing and rehearing en banc. A response to the petition was invited by the court and filed by cross-appellant Promega Corporation. The petition was first referred to the panel that heard the appeal, and thereafter the petition for rehearing en banc was referred to the circuit judges who are in regular active service.

Upon consideration thereof,

IT IS ORDERED THAT:

The petition for panel rehearing is denied.

The petition for rehearing en banc is denied.

The mandate of the court will issue on March 5, 2015.

FOR THE COURT

February 26, 2015
Date

/s/ Daniel E. O'Toole
Daniel E. O'Toole
Clerk of Court

* Circuit Judge Mayer participated only in the decision on the petition for panel rehearing.